Major Hetvābhāsas

A FORMAL ANALYSIS

WITH REFERENCE TO NYĀYA & BUDDHISM

DR. RAGHAVENDRA PANDEYA

THE BOOK

An Opinion

I have gone through the book which consists of eight chapters. The first five chapters deal with the dialogue between the Buddhist scholars and the Nyāya scholars. The chapters six and seven are devoted to *Prakaraṇasama hetu* and *Kālātīta hetu*. The last chapter gives the conclusion, where the author tries to formalize his observations in the western mould He comes to the conclus on that every fallacy is related either to *Viruddha* or *Anaikāntika* or both; that *Savyabhicāra* and *Viruddha* are the two logically primitive *Hetvābhāsas*; that all the *Hetvābhāsas* are linked with respective views of *Sad hetu*. The author, however, draws conclusion that it would not be correct to suggest that these are formal fallacies; they in their formation are intimately related to facts. All these are valuable and thought-provoking conclusions and should initiate any one interested in Indian logic to the problem further.

For a long time the Nyāya logicians and the Buddhist logicians tried to give a parallel picture of their logical theory in respect of meaning, inference and analysis of the thing given in perception. Buddhist theory of *Apoha* may or may not be accepted but, as the author says, has to be taken seriously and this cannot be really done unless one takes into consideration the *Hetvābhāsas*. The author has made a very serious study of this problem His analysis is sharp and the material that he uses has a depth. since he has made efforts first to understand the problem carefully and then to discuss it with learned Pandits of *Navyanyāya*.

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RAGHAVENDRA PANDEYA

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DEDICATED

TO

MY FATHER AND MOTHER

CONTENTS

PREFACE

The idea of writing a thesis on *Hetvābhāsa* came to my mind when I was writing a dissertation on *The Concept of Apoha* as a part of my M. A. course. It is well known that according to the Buddhists of Dignāga-Dharmakīrti school *anumāna* belongs to the category of *Vikalpa*. *Apoha*-theory relates to meaning and explains away any reference to the universal that may be involved in meaning. By resorting to the device of 'double negation' the Buddhists have replaced all 'referencial' usages of language by 'descriptive' ones. As against the Nyāya-Vaiśeṣika position that language is essentially 'referencial' the Buddhists maintain that language is essentially 'descriptive'. Description is given in the standard form of the negation of all the possible usages other than the one which is involved. The comprehension of 'other than' is a blanket comprehension and therefore it belongs to *sāmānya-lakṣaṇa*. The denial of the blanket comprehension likewise is itself an activity within the *sāmānya-lakṣaṇa*. This idea is based upon the assumption that the denial of *sāmānya* is itself a *sāmānya* and the negation of a negation is itself negative. Thus *Apoha* in itself cannot be equated with affirmation. "Not-not A" is not equivalent of "A", because in the Buddhist terminology any affirmation is the *denial of the other*. Each affirmation is always relative to denial of the other and therefore cannot be the affirmation of a real, i.e. *svalakṣaṇa*. It is a different matter that the denial may, by implication, lead to some kind of affirmation. But that affirmation would always be affirmation only for practical purposes and not for the purpose of logic. This being the case the Buddhist theory of inference, which deals with affirmation and denial of premises and conclusion, has to be viewed in the light of *Apoha* theory. To my great disappointment I could not find any work written by any modern scholar where the relation of *Apoha* theory with the Buddhist theory of *anumāna* is properly discussed.[1]

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1. Randle in his *Fragment form Dignāga* has hinted this point when he says : "The *Trairūpya* in the light of the *apohavāda* (i. e., perhaps, the '*avadhāraṇas*') implied in the statement of the *trairūpya*", p. 7.

I would have liked to discuss the entire Buddhist theory of *anumāna* in relation to the *Apoha* theory but that would have involved extensive study and mature understanding of abstruse works of Dignāga and Dharmakīrti. Therefore I decided to take a significant segment of the Buddhist theory of *anumāna* for my investigation as a prelude to a wider study of *anumāna* as a whole. In selecting *hetvābhāsa* section of the *anumāna* theory I was solely guided by curiosity of looking at *anumāna* from the side of what it is not.

Any discussion of the theory of *anumāna* must keep in mind a fact of the history of Indian logic that *anumāna* is discussed in the context of a debate between the proponent and the opponent. They devote themselves to finding fault with each other's arguments. Thus a debate revolves around the *hetvābhāsas*. Even the idea of *sad-hetu* very often presupposes what a *hetu* should not be. This preconceived idea of what a *hetu* should not be is, in the context of different systems of Indian Philosophy, dictated by an ontology, a religious or mystical view-point and so on For example, in the case of *bādhita* the *bādha* is generally pointed out in relation to some extra-logical commitment of the kind of the eternality of the *Veda* or momentariness of reality. It is held by all the schools that logic should not be allowed to lead us away from our basic commitments. Thus *hetvābhāsa* receives prominence in that theory of *anumāna* which takes inference as determined contextually.

From the above consideration one can also conclude that in Indian logic *anumāna* is materially bou d. Unlike Western logic, therefore, purely formal approach to the problem of inference is not at all found in the history of Indian logic. In the context of Nyāya, which believes in the referencial theory of meaning, no *vyāpti* can be formed unless there is some experiencial fact to fall back upon. In the case of the Buddhist theory of *Trairūpya* insistence on necessary presence of a *hetu* in the *sapakṣa* indicates the same situation. It is also noted that there is no evidence to show that in India inference was ever considered to be a matter of relation among propositions as premisses. It has primarily been a matter of relation among terms. Thus if a modern scholar were to look at the Indian theory of inference he would find inference to be a matter of terms and quantifications.

Though I was drawn to this topic *via* Buddhism, yet I am convinced that both historically and conceptually the Nyāya view of *hetvābhāsa* is presupposed by the Buddhist. Therefore the present thesis is an attempt to view *hetvābhāsas* both from the points of view of Nyāya and Buddhism, bringing it down to the works of Gaṅgeśa In this sense the thesis approaches the problem of *hetvābhāsa* in the historical context, though it is not my intention here to write a history but to look at the problem in the light of conceptual development.

In the course of my study I have observed that both in Nyāya and Buddhism the nature of *hetvābhāsa* is determined by certain logical paradigms of reasoning. In the case of Nyāya, e.g., *savyabhicāra* has assumed predominant importance merely because the relation between *hetu* and *sādhya* has been viewed in terms of class-to-class or class-to-member relationship. Other four *hetvābhāsas* of Nyāya are directly or indirectly related to *savyabhicāra.* In the case of Buddhism the emphasis being on *Apoha*, *viruddha* or contradiction gets predominance, as remaining two *hetvābhāsas* are connected with it. In order to bring out this position more prominently I found the tools of Formal Logic very helpful. This task has been attempted by trying to see what result would follow if, in the case of Nyāya, *savyabhicāra* is denied and each one of the other four *hetvābhāsas* is affirmed, and in the case of Buddhism, if *viruddha* is denied what effect it has on remaining two *hetvābhāsas.* The result obtained is very interesting. All the four *hetvābhāsas* of Nyāya are implied by one of the two definitions of *savyabhicāra* given by Uddyotakara. But the two definitions of the *savyabhicāra* do not imply mutually ; one implies the other but the reverse is not the case. In the case of Buddhism the two *hetvābhāsas* are implied by the definition of *Viruddha* given by Dignāga. While comparing the Buddhist and the Nyāya positions it is discovered that one of the definitions of the *savyabhicāra* given by Uddyotakara (the definition which does not imply the other definition, as mentioned above) is exactly the same as the definition of *Viruddha* given by Dharmakīrti. This would mean then that the *hetvābhāsa* as a whole can be defined in terms of *viruddha* of Dharmakīrti together with its sub-contrary i.e. one of the definitions of Uddyotakara.

I was able to arrive at this conclusion only through the procedure of Formal Analysis. By 'Formal analysis' I mean the analysis of definitions with the help of the rules laid down by modern Symbolic Logic. These rules have been taken from the works of W.V.O. Quine and I. M. Copi. I have also received considerable enlightenment from the *Buddhist Formal Logic* by R. S. Y. Chi. In fact it was Chi's work that showed me the way.

The *First Chapter* of the thesis is devoted to the exposition of the concept of *sad-hetu* according to both Nyāya and Buddhism. The *Second Chapter* gives a brief description of the origin and development of the idea of *hetvābhāsa* in the history of Indian logic. Here I have also discussed the general difinitions of *hetvābhāsa* given by different authors and compared them. In the following *five chapters* (from Chaper 3 to 7) I have discussed the specific *hetvābhāsas* in detail and have given formal analysis of each of them in the light of Nyāya and Buddhism. The *Eighth Chapter* gives the conclusion, which has been summarised above.

The thesis is based upon selected texts and English and Hindi translations of these texts. In many cases I have also drawn my material from discussions with scholars and Pandits. Therefore I do not claim any originality in this work. I am aware of the fact that the kind of work that I have undertaken breaks a new ground and tries to explore the possibility of laying down the foundation of comparative logic. Keeping in view my limitations both in Indian and modern Western logic, I can only say that if a beginner like myself can arrive at certain interesting resnlts, mature scholars will be able to achieve much more if they cared to direct their attention to this hitherto unexplored area of knowledge.

RAGHAVENDRA PANDEYA

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I am highly indebted for initial discussion and the outline of this work to my revered teacher late Dr. R R. Dravid, who, to my great misfortune was taken away from our midst by cruel hands of death. The thesis is written strictly in accordance with the plan he had approved just two days before his death.

Professor N. S. S. Raman, who took every care to help me complete this work cannot be adequately thanked. I am highly indebted to him and pay him my humble respects. Prof. A. K. Chatterji, and Prof. L. N. Sharma of the Department of Philosophy took interest in my work and offered valuable suggestions for improving upon this work, for which I thank them. I am also indebted in various ways to my former teachers of the Department of Philosophy of the University of Delhi, specially to Professor R.C. Pandeya, and Prof. S. R. Bhatt, who gave me initial training in Indian Philosophy and Logic and subsequently guided me in my studies and writing. Professor S.S. Barlingey of Poona University, Professor B. K. Lal of Magadh University and Professor Rajendra Prasad of I. I. T., Kanpur gave me their valuable time for discussions. Pandit Badarinath Sukla, former Vice-Chancellor of the Sampurnananda Sanskrit Visvavidyalaya, Varanasi and Professors Jagannath Upadhyaya and Ram Prasad Tripathi of the same University helped me through my reading of texts. To them I express my indebtedness.

It looks odd if I thank my father, Professor R.C. Pandeya of the University of Delhi and my mother Shrimati Vidyawati Pandeya for making me what I am. My wife Shrimati Veena Pandeya needs no special mention for every help that she has rendered because she will have to share every praise and blame that comes to me.

RAGHAVENDRA PANDEYA

ABBREVIATIONS

BFL— RSy Chi : *Buddhist Formal Logic*, London, 1969.

BL-1— Th. Stcherbatsky : *Buddhist Logic*, Vol. I, Leningrad, 1932.

BL-2— Th. Stcherbatsky : *Buddhist Logic*, Vol. II, Leningrad, 1930.

FD— H. N. Randle : *Fragments from Dignāga*, London, 1926.

GNP— Gautama : *The Nyāya Philosophy*, by Junankar, Motilal Banarasidass, 1978.

GOS— *Gaekwad's Oriental Series*, No. 136 by B. J. Sandesara, 1961.

HIL— S. C. Vidyabhusana : *A History of Indian Logic*, Calcutta, 1921.

IL— H. N. Randle : *Indian Logic in the Early Schools*, London, 1930.

Ingalls—D. H. H. Ingalls : *Materials for the study of Navya-Nyāya Logic*.

NB— *The Nyāyabindu*, ed. by P. Peterson. *Bibliotheca Indica*, Calcutta, 1889 .

N. Bh.—*Nyāya-bhāṣya* by Vātsyāyana, ed. G. S. Tailanga, Vol. IX, Benaras : E. J. Lazarus & Co., 1896.

NBT— The *Nyāyabinduṭīka*, Sanskrit edition, *Bibliotheca Indica*, Calcutta, 1889.

NM— The *Nyāyamukha*, Chinese translation. *Taisho Tripiṭaka*, No. 1628.

NPD— The *Nyāyapraveśa*, ed. by A. B. Dhruva, Geakwad's Oriental Series, Baroda, 1930.

NPGC—Kuei-Chi's *Great Commentary on the Nyāyapraveśa*, *Taisho Tripiṭaka*, No. 1840.

NS— *Nyāya-sūtra* of Gautama, translated by S. C. Vidyabhusana, Allahabad : The Panini Office, 1930.

NV— The *Nyāya-vārtika* of Uddyotakara, ed. V. P. Dvivedin (Dube), *Bibliotheca Indica*, 1887.

NVT— The *Nyāyavārttikatātparyaṭīkā*, ed. by G. S. Tailanga, Vizianagaram Sanskrit Series, Benares, 1898.

PVV— *Pramāṇa-Vārtika* with *Vṛtti* of Manorathanandin.

SV— *Ślokavārtika*

TS— *Tattvasaṅgraha*

TSP— *Tattvasaṁgraha* with *Pañjika* of Kamalaśīla

TC— *Tattvacintāmaṇi*, Gaṅgeśa Upādhyāya.

CHAPTER I

INTRODUCTION—THE NATURE OF HETU

In the history of Indian Logic we find no controversy regarding the utility of the *hetu*. It is universally held that without *hetu* we cannot infer. The *hetu* plays a key role in inference. In the earlier period of the history of Indian logic we find a mention of three characteristics of *hetu* but in the later period the number of these characteristics increased upto five. Some also hold that a *hetu* has four or six or even seven characteristics. Undoubtedly, the *hetu* is relational in the sense that it is related to the *sādhya*. It is by virtue of this relation that the knowledge of a *hetu* leads us to the knowledge of a *sādhya*. One cannot therefore talk of *hetu* in isolation from *sādhya*; a *hetu* not so related or, better, not known in its relation to a *sādhya* would be just a thing having no significance in the context of inference. In the context of inference a *hetu* is a thing whose relation to a *sādhya* is known. Accordingly as a prelude to actual inference it becomes necessary to determine the kind of relation that holds two things together in such a way that one of them could serve as a *hetu* capable of establishing the other, *sādhya*. The determination can be done only in the actual field of experience where the two are found or not found together. This field in the context of the determination of the relation between a *hetu* and a *sādhya* is known as *pakṣa*. Thus in a general sense *pakṣa* could be said to be the field in which the two are discovered existing in a relation but in a special sense that particular instance is also called *pakṣa* where a *hetu* is found but the *sādhya* as to be determined. Also any particular case taken from the general field to bring home the fact of relation of a *hetu* to its *sādhya* is termed *dṛṣṭānta*. *Pakṣa* in the special sense and *dṛṣṭānta* are possible only after this relation is discovered and known in the general field. So the concepts of *hetu*, *sādhya*, *pakṣa*, and *dṛṣṭānta* are inter-related in the context of inference.

A *hetu* or a *sādhya* may either be affirmative or negative in character. We have thus four possible combinations of relations

between a *helu* and a *sādhya.* These are as follows : (1) affirmative *hetu* and affirmative *sādhya*; (2) affirmative *hetu* and negative *sādhya*; (3) negative *hetu* and affirmative *sādhya* and (4) negative *hetu* and negative *sādhya.* Of these the following two cases are common : (1) where both are affirmative and (2) where both are negative. The example of the *hetu* and the affirmative *sādhya* is "It is a tree because it is *śiṁśapā*". The example where both are negative is : "Here there is no *śiṁśapā,* because there is no tree" or "Here there is no warmth, because there is no fire". Every field where correlation between an affirmation or negative *hetu* and an affirmative or negative *sādhya* is discovered would be *sapakṣa* and every other field where such a correlation is absent would be *vipakṣa.* On this basis the Buddhists maintain that there are three characteristics of a *sad-hetu,* viz. *pakṣa-sattva, sapakṣa-sattva,* and *vipakṣa-asattva.* The Buddhists hold that a *hetu* is *sad* or good for the purpose of inference if and only if it fulfils all the three characteristics. Nyāya adds two more conditions for a *sad-hetu, i e. abādhitatva* and *asatpratipakṣatva.* Accordingly a *hetu* is *sad* if any only not fulfils all the five conditions. If any *hetu* does not fulfil one or more of these conditions it is treated as *hetvābhāsa.* Therefore according to the Buddhists there are three possible cases of *hetvābhāsas*; on the other hand, Nyāya holds five possible cases of *hetvābhāsas.* A thing which seems to have a relation with a *sādhya* but actually it has no such relation fails to yield inference. A study of *Hetvābhāsa* is thus a study into those conditions under which a *hetu* fails to have a relation with a *sādhya* though maintaining on the face of it a semblance of *hetu.* In order to achieve this purpose it is necessary to start with a brief consideration of *sad-hetu.*

A Survey of the Nyāya-View

According to Gautama, "a *hetu* is the means of proving what is to be proved on the basis of homogeneous instance cited".[1] In other words, a *hetu* is related to a *sādhya, i.e.* what is to be proved, and this relation is established on the basis of its sharing some characteristics with the *sādhya* (sādhyadharma).

1. NS. I. 1-34.

The *sādharmya* (having property common with a *sādhya*) of *hetu* is found on the basis of the observation of the *hetu* and the *sādhya* existing together in various instances. Thereafter when in a particular case (where the inference of the *sādhya* is to be done) only a *hetu* is observed, its *sādharmya* with the *sādhya* based on the past observation is already known. It is this *sādharmya* that forces us to infer the unobserved *sādhya* in that instance. An argument based on it is generally considered to be valid. But there is one difficulty, *sādharmya* taken in this sense as an essential character of a *hetu* cannot ensure invariable concomitance. In other words *sādharmya* of this nature indicates the co-presence of *hetu* and a *sādhya* in observed instances. It does not guarantee any connection between the two. No valid inference is possible in the absence of invariability of the ralation of a *hetu* to a *sādhya*.

Moreover *sādharmya* is a property of the thing, but a *hetu* is a part of the statement of inference. How could, it may be asked, a property attributable to a thing be the property a part of the inference statement? Uddyotakara while considering this objection says that there is some similarity between a statement and what the statement is about. We find objects to be both eternal and non-eternal, corporeal and non-corporeal. The same can be said of statements, when a person asks, "What does this man say ?", the answer is "He says that it a cow" (gauriti). Here the particle 'iti' serves the purpose of singling out the expression 'Cow' from all other expressions.[1] The idea behind this view of Uddyotakara is that no sharp distinction can be drawn between a material and a formal mode of speech. In the example given by him the question is about the statement of person, *i.e.* about what that person said but the answer relates to the thing cow about which a statement was made. The particle 'iti' does not necessarily serve the purpose of identifying a thing, distinct from all other things, as maintained by a statement. In other words a reporting statement may in certain cases also become a statement about things. Similarly, Uddyotakara seems to think, a statement describing the characteristics of a *hetu* (which is a part of the inference-statement) may sometimes also be about the property of a thing. We need not go into the logical merit of this view of Uddyotakara here. But the fact remains that

1. Junankar, N.S. : Gautama : *The Nyāya Philosophy*, p. 237.

for Nyāya in general *hetu* means both the part of an inference-statement and a thing having some property in common with *sādhya*. An interesting implication of this position would be that for the Nyāya inference is never based on purely formal relations.

The problem concerning invariable concomitance is sought to be solved by holding that a *hetu* is an effective means of inferring, provided it is based on 'homogeneity or heterogeneity of example.[1] The *sādharmya* is linked with *vaidharmya* in the sense that if a *hetu* must necessarily be present with a *sādhya* then obviously it must be absent where that *sādhya* is absent. This ensures a definite link between the two in such a way that the observation of a *hetu* guarantees the presence of the *sādhya* in a particular case. Thus the complete statement regarding the nature of *hetu* as given in the *Nyāya-Sūtra*[2] is : *Hetu* is a means for proving that which is to be proved on the basis of homogeneity or heterogeneity of the example. But there is one difficulty with this statement. If one fails to find a property in the opposite example, though in fact that property might have been present there, then that would become a valid *hetu*, which obviously it is not.

The main objection, however, is that these two *sūtras* do not provide a definition of the *hetu* : they only tell us that the *hetu* is of two types viz *sādharmya-hetu* and *vaidharmya-hetu*. There is no substantial difference between these two. The difference lies only in the mode of expression. Vātsyāyana explains[3] similarity (*sādharmya*) with the help of the example; "Sound is non-eternal because it has the character of an origin". On the other hand, in the case of dissimilarity (*Vaidharmya*), he gave the example—"Sound is non-eternal, because it has the character of an origin; such substances as *ātman* are eternal because they do not have the character of an origin". It amounts to saying "This is a man because he has two legs, one mouth", etc., etc., When one argues that 'This is not a man because he does not possess these characteristics—he does not tell any new thing.

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1. *ibid.*
2. NS. I. 34-35.
3. NBh. I. 1.34.

Jayanta[1] points out that these two *sūtras* do not tell us what actually the *hetu* is. These two *sūtras* actually explain the two types of *hetu.* Without providing the definition of *hetu* one cannot explain whether a *hetu* is *sādharmya* or *vaidharmya*. Jayanta further says that it does not mean that Gautama did not define *hetu*-he defined *hetu* as the means for proving the existence of *sādhya.* He adds that these two *sūtras* also provide the two forms of *hetu,* namely (1) the *hetu* 'having agreement in presence as well as agreement in absence (*anvaya-vyatireki*) with the *sādhya*', and (2) the *hetu* having only 'agreement in absence' (*vyatireki*) with the *sādhya.* Further more, he gives another interpretation in which he claims that these two *sūtras* can be combined into one, i.e. 'a *hetu* is based on both similarity and dissimilarity' (*sādharmya-vaidharmya-hetu*). This interpretation shows that every inference must have two examples : one based on similarity and the other on dissimilarity.

Uddyotakara[2] explains that the example of dissimilar *hetu* (*vaidharmya hetu*) as given by Vātsyāyana is not correct. The correct example would be—'The living body is not without soul, because it has no vital breath'. Of this example we are unable to find even a single instance. So both the parties are of the view that of what is to be found without soul is also without breath; then no living body is to be found without breath. On this basis one concludes that a living body is not without a soul.

Uddyotakara tries to convey that nobody finds a living body without breath. If any person succeeds in finding such an instance then that instance is not derivable from its universality. In other words the absence of soul is found with the absence of breath. To make it general we can say 'Everyrhing that is without soul has also been found without breath.'. In the above example the *hetu* precludes the absence of breath from all living beings.

The exact position regarding the *hetu* is this : "In the case of the universal affirmative *hetu,* the perception of one property leads to the inference of the presence of another property which is in invariable concomitance with the former. So also in the case of the negative *hetu,* the perception of the absence of one property leads

1. Jayanta : *Nyāya-Mañjari*
2. NV. I. 1-35.

to the inference of the absence of the other property which is in invariable concomitance with the former".[1]

Furthermore, Uddyotakara points out that the negative *hetu* is used only in debate for defeating the opponent. This implies that really only one type of *hetu* is possible viz, universal-affirmative *hetu*. The other *hetu*, i.e. negative *hetu*, does not fulfil the criterion which is essential for a *sad-hetu*.

Uddyotakara provides three conditions for *sadhetu*. These are as follows : (1) Knowability, (2) Knowability must be in the form of universal affirmative; and that universal affirmative must be (3) such that which is derived from its universality. This is what is called *avyabhicaritatva*. The negative *hetu* does not fulfil these criteria. That is why Uddyotakara does not recommend negative *hetu* as a *sad-hetu*. This does not mean that the negative *hetu* does not play a role—it plays a role only in the sense that it is used as a means for defeating the opponents.[2]

Uddyotakara in his statement on the nature of *hetu* uses two very important terms, i.e. 'universal concomitance' and 'reality'. In order to understand the Nyāya-Vaiśeṣika position regarding the

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1. Junankar, N.S. : G.N.P. pp. 238-40.
2. The above consideration shows that according to the Nyāya point of view material implication is possible. There are four possible relations between *hetu* and *sādhya*. These are : (1) the *hetu* is *sat* (valid) and the *sādhya* is *sat* (valid); (2) the *hetu* is *sat* (valid) and the *sādhya* is *asat* (invalid); (3) the *hetu* is *asat* (invalid) and the *sādhya* is *sat* (valid) ; and (4) the *hetu* is *asat* (invalid) and the *sādhya* is *asat* (invalid). The rule of material implication materially implies that the *sādhya* if and only if both the *hetu* and the *sādhya* are either both *sat* or both *asat* and also when the *hetu* is *asat* and the *sādhya* is sat. On the other hand, the *hetu* does not materially imply the *sadhya* if the *hetu* is *sat* and the *sādhya* is *asat*. If we apply this rule we see that only the second possibility rules out the possibility of implication because in this possibility the *hetu* is *sat* and the *sādhya* is *asat*. Therefore, according to Nyāya, three valid relations are possible between *hetu* and *sādhya*.

nature of *hetu* we should remind ourselves of the view these schools hold as to the nature of reality.

The Role of Universal

In ordinary language we talk of X being in universal concomitance with Y if both of them are found together. But for the purpose of logic this alone is not sufficient. Even two horns of a bull are found together but it would not be logical to draw any valid inference from the perception of one to the presence of the other. The fact is that co-presence is not a guarantee for any abiding relation between two things. In order therefore to be able to infer validity *hetu* and *sādhya* must be present together by virtue of some relation that keeps them bound together. In inference this relation, rather than the fact of copresence is invoked. Moreover, for the purpose of inference relation between two particular things is of no consequence. We have in a way to transcend particularity in such a way that what holds for one particular must *mutatis mutandis* hold for all other particulars of similar kind. In the absence of the enlargement of relation in this manner thinking cannot proceed. Therefore we have to conceive of relation not between a particular *hetu* and a particular *sādhya* but between the classes of them. Therefore while considering the nature of universal concomitance we have to take into account the nature of class and the relation that classes may have. Each system of philosophy has its own view of classes. Therefore each system conceives of the relation between *hetu* and *sādhya* in the light of its position regarding the nature of class.

The origin of the concept of universal (*sāmānya*) in Nyāya-Vaiśeṣika tradition goes back to earliest works of the school.[1] This experience provides the basis for the cognition of the universal. Though it is not specified whether the universal which is the ground of the experience of similarity and dissimilarity among things is an objectively real entity or not, the very fact that it has been given the status of *padārtha* implies its independent and objective existence. According to Kaṇāda, the universal inheres in multiple (members) and is eternal. In this definition there is a

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1. Sāmānyaṁ viśeṣa iti buddhyapekṣam—V.S. I. 2.3.

reference to three features of the universal, namely, (1) its eternality, (2) its multiple membership, and (3) its relation with its members in terms of inherence. The basis for holding that there is a universal is the cognition of similarity among things. It implies that without postulating the universal, the concept of similarity is not explicable. A comparative analysis of the position of Gautama and Kaṇāda on this issue makes it clear that while Gautama maintains that the universal is the basis of our conception of similarity and also of differentiation, Kaṇāda regards the conception of similarity alone as being based on the universal. Śaṅkara Miśra[1] in his *Upaskāra* on the *Vaiśeṣika-sūtra* taking a clue from this point, states that the reality as *sāmānya* and *viśeṣa* is warranted by our experiences of similarity and differentiation respectively. He makes it very clear that *sāmānya* is the cause of the conception of similarity only and not of differentiation, which is caused by *viśeṣa*.

Praśastapāda, commenting on the *Vaiśeṣika-sūtra* maintains that the universal is the cause of the conception of similarity among individual things in which it is present wholly and inseparably.[2] In this definition we find two important points : (1) The universal resides in many individuals and in spite of this it preserves its unitary character. That is why though the individuals are multiple the universal inhering in them is one. (2) It is never the case that the universal resides partially in its multiple individuals. He does not make it clear, however, as to how a universal which is unitary resides in multiple members without at the same time its unitary character being affected.

Uddyotakara commenting on the *Nyāya-sūtra* in his *Nyāya-Vārttika* makes a specification with regard to the universal being the cause of the notion of similarity. He points out that our notion of similarity is not necessarily based on universals.

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1. tatra sāmānyasya tad-viśeṣasya ca lakṣaṇaṁ buddhir eva, anuvṛtta-buddhiḥ sāmānyasya vyāvṛtta-buddhir viśeṣasya. Upaskāra on V.S. I. 2.3.
2. sva-viṣaye sarvagatam abhinnātmakam aneka-vṛtti svarūpānugam pratyayakāri svarūpābhidhena ādhāreṣu prabandhena vartamānam anuvṛtti-pratyaya-kāraṇam.—V.S, ibid.

There may be similarity based not on universals, but on other considerations like *upādhi*, etc.[1] Uddyotakara points out clearly that universal is the basis of only those notions of similarity where certain constitutive and regulative conditions are fulfilled. Exemplifying his point he writes that we do have the notion of similarity like 'cooks', 'teachers', 'blindness', etc., but at the root of these notions there are no universals. On the other hand, in the notions like those of 'man', 'cow', 'pot', etc., we have corresponding universals like 'man-ness', 'cow-ness', 'pot-ness' etc. The regulative conditions which debar any property from being treated as universal are brought under six heads by Udayana in his *Kiraṇāvali*.

In the early phase of the Nyāya-Vaiśeṣika tradition there was some ambiguity with regard to the ontological status of the universal and also with regard to its precise difference from the category *of viśeṣa*. This gives the impression that a quality is regarded as *sāmānya* only if we conceive it as a class-character inhering in many, and the same is to be regarded as *viśeṣa* when we take it to be residing in all pots. But when we regard it as distinguishing pots from all other things it is to be taken as *viśeṣa*. In Navya-Nyāya this ambiguity has been completely removed by regarding *sāmānya* as independent, objective and eternal entity which is a class-character and by regarding the *viśeṣa* as the differential character of the ultimate elements.

There are some interesting implications of this view regarding the acquisition and expression of knowledge. There are two different aspects which are involved here : (1) The universal plays a significant role in our knowledge of every individual object. To know a thing is to discern how it is similar to and dissimilar from certain other things. In such a discernment there is a necessary reference to the universal which constitutes the essence, and differential character of the individual. For example, to know something as a 'pen' necessarily presupposes the prior cognition

1. tat samāna-pratyayotpatti-kāraṇam jātir iti nāto niyamena samāna-pratyayotpattiḥ, jātim antareṇāpi dṛṣṭatvāt.

NV. II. 2.65

of 'pen-ness' in it. The followers of Nyāya therefore insist that in every determinate and judgmental knowledge universal plays a necessary and inevitable role. (2) In every communication of knowledge through language universal necessarily intervenes. To communicate is to identify Nothing can be identified unless there is a placement of it in a particular class. If as a speaker I am unable to identify the thing I am talking about or if I am unable to make my listener identify the thing I am talking about, then the very purpose of communication is lost. To make the communication meaningful there has to be identification of the object of communication. This identification takes place with the help of the universal. So a word refers to an individual which is having class character and structure. Some of the later Naiyāyikas argue that a bare individual or bare universal is never the referent of a word. The referent of a word therefore is a universalised particular. In any case it is always the individual via universal which is the ultimate referent of a word.

Now question arises : what type of relation does exist between a particular and universal ? The relation between the two is a special kind of relation that is found existing within an entity, and that relation is said to be eternal and one. Different particulars are held together within a universal and that universal exists in them until they are destroyed. In fact when the particulars are destroyed it does not mean that the universal also ceases to exist. Undoubtedly universals can in a sense exist without particulars but a particular can never exist without a universal in it. In the event of non-existence of a universal even to call particulars as particulars would also become meaningless because the idea of a particular can be significant in the context of a universal alone. If the particulars were to exist as independent entities outside universal, then being discrete entities in their own right they would give us no concrete knowledge of their relation to each other outside that universal. What necessitates the acceptance of a universal among particulars is a kind of systematic relationship among the particulars of one kind as that alone could be the basis for the identification of these particulars. The relation between particulars and universal, it seems, demands a kind of systematic and natural connection which to my mind would constitute the essence of the *samavāya*.

The idea of 'systematic connection' is introduced here in order to understand the Nyāya-Vaiśeṣika position regarding particular-universal relation. It has some significant implications. First, the connection among particulars of a class in accordance with some system is possible when there is a natural tendency among particulars to be connected with similar other particulars. Universal is found in particulars not just by chance. This means that particulars do not produce universal. They are, according to Nyāya, with universal. This ensures an order in the universe. Particular-universal relation is therefore a well-ordered relation.

Secondly, systematic connection introduced between particulars prevents particulars being totally identical with or totally different from the universal. Particulars themselves when connected give rise to the idea of universal. So the universal is not just a sum total of its particulars. Similarly, the universal being totally dependent for its manifestation on the systematically connected particulars has no manifest existence apart from these particulars. Therefore it is not a chaotic or a chance product.

Thirdly, the arrangement of particulars under a system causes particulars to loose their identity. The system being dominant the knowledge of universal is not viewed as a sum-total (*samūhālambanajñāna*) but its knowledge is a well ordered unity (*viśiṣṭajñāna*). In fact those Naiyāyikas who think that particulars are perceived as discrete entities in the universal seem to think that the knowledge of ordered unity implies particular and their arrangement.

The description of *samavāya*, which is the relation between particulars and the universal, as 'eternal' relation means that as long as particulars exist their universal must remain in control of the system. In this sense one can also say that as long as particulars remain within a system the universal will remain constantly manifest in them. This is what is meant by *samavāya* as an *ayuta-siddha* relation.[1]

We can thus say that the universal is not identical (*abheda*) with and not different (*bheda*) from its particulars. Logically speaking in the case of *samavāya* when the Nyāya says that particulars are

1. *Tarka-saṁgraha*, Sec. 79 (Athalya edition).

not identical with the universal it does not mean that the universal is totally different from particulars. Similarly, when the universal is said to be non-different from its particulars it does not mean that the universal is identical with particulars.

The above consideration shows that the universal is essential for the existence of particulars, and also the relation between the two is eternal It means universal is a real entity. In the process of inferential knowledge we have two universals *i e.* the universals in the *hetu* and in the *sādhya* and the relation between the two is that of invariable concomitance. Invariable concomitance between the two universals is possible either when one is included in the other (*i.e.* of *hetu* in *sādhya*) or when the two coexist.

Gaṅgeśa in the *Tattvacintāmaṇi*[1] maintains that universal concomitance is known from the observation of copresence of two facts, provided this knowledge is not vitiated by a doubt or uncertainty as to its invariability. If there is a difinite knowledge that the copresence is variable, the universal concomitance is out of question. But if there is no definite certainty of an exception, the universal concomitance can be presumed and this presumption amounts to certitude when all doubts are resolved by a *Reductio ad absurdum* (*Tarka*) of the contrary supposition. It implies that *Reductio ad absurdum* is a sort of inference which is based on the knowledge of invariable concomitance between contradictories and so there will arise a vicious infinite series. Thus, when one argues that smoke must be concomitant with fire, because smoke is the product of fire and a product cannot exist without its cause, the arguer assumes a wider universal proposition that cause and effect are inseparably related. For this second universal proposition third will have to be assumed and so on to infinity. One can ask, if smoke is a product of fire, how can they exist independently ? Gaṅgeśa replied that no such doubt was possible. Further, he points out that doubt is possible so long as you cannot contradict yourself. This implies that no body can doubt the invariability of causal relation.

The Nature of Vyāpti

Through *vyāpti*, we are told, we get unique knowledge called inference. This *vyāpti* or the invariable concomitance of a *hetu* with

1. Vidyabhusana, S.C., *History of Indian Logic*, pp. 421-28.

a *sādhya* should be neither based on non distribution of the *hetu* in the *sādhya* nor it should have a variable existence with *sādhya*. The case of the inclusion of the *hetu* in the *sādhya* is less complicated than the case of the co-existence of the two. Generally, coexistence may be of two types, viz. fixed (*niyata*) and unfixed (*aniyata*). Unfixed means variable (*vyabhicārin*) and fixed means invariable (*avyabhicārin*). The relation between fire and smoke is callad *vyabhicāri* because fire without smoke can exist independently, *e.g.* in the case of fire-ball there is no smoke. In other words when we perceive fire—on that account we cannot say that there must be smoke. So '*vyabhicaritatva*' means that out of two things one can exist in the absence of the other. But in the case of '*avyabhicaritatva*' one cannot exist without the other. For example, the relation between smoke and fire is such that without fire smoke cannot exist. In our daily life we have seen in kitchen that smoke is always accompanied by fire. This type of concomitance shows that smoke cannot exist without fire. Again, where there is smoke there is fire, again, where there is no fire there is no smoke. So we can say that smoke invariably exits with fire but fire need not invariably exist with smoke.

Gautama, in his *Nyāya-Sūtra*, Vātsyāyana, in his *Nyāya-Bhāṣya*, and Uddyotakara, in his *Nyāya-vārtika*, do not mention *vyāpti* (universal concomitance). Therefore, we are unable to find the nature of *vyāpti* according to the views of these writers. Dharmakīrti,[1] the prominent Buddhist logician, holds that the higher (*vyāpaka*) contains the lower (*vyāpya*). If the lower (*vyāpya*) exists, then the higher (*vyāpaka*) must be there. Here the nature of both *vyāpya* and *vyāpaka* is called the *hetu's vyāpti* or universal concomitance of the middle term.

Vācaspati Miśra commenting on the *Nyāya-Vārtika* although refutes *vypti*,[2] but he gives some indication regarding the nature of *vyāpti*. He recognises the relation between the *sādhya* and *sādhana* as natural (*svābhāvika*). This is what is like *vyāpti*. Udayana dis-

1. tasya pakṣa-dharmasya sato vyāptiḥ, yo vyāpnoti yaśca vyāpyate tadubhayadharmatayā pratiteḥ. Arcaṭa : *Hetu-bindu-ṭīkā*, pp. 71-18.
2. At least this is the view of old thinkers. Science would not accept it.

closes his view while commenting on the text of *vyāpti*. Vācaspati maintains that the relation on which inference is to be based, whatever else it may be, is both natural (*svābhāvika*) and fixed (*niyata*). The natural relations are those relations which have no adjuncts (*upādhi*). For instance, the relation of smoke to fire is natural because in that case there is no *upādhi*. Here smoke is caused by fire without any conditions. But in the reverse case the relation between the two is not natural because in this case wet fuels are necessary. This implies that the relations which are free from adjuncts (*nirupādhi*) are natural or *svābhāvika*.

Gaṅgeśa[1] points out that if in any inference *upādhi* is present, it is quite clear that the *hetu* in that inference is fallacious, *e.g.* "*dhūmavat, vahneḥ*". This implies that in the presence of *upādhi* a *hetu* is called as *vyabhicāri*, and in the absence of *upādhi* a *hetu* is known as *avyabhicāri*. Therefore from the *hetu* where we find *upādhi* whatever we infer is defective. Again, where *upādhi* is absent and the *hetu* is *niyata*—from that *hetu* whatever we infer is tautologous.

In this way we have seen that according to the Naiyāyikas the relation between a *hetu* and a *sādhya* must be natural in the sense that the *hetu* exists unconditionally in the *sādhya*.

It seems that the Nyāya-Vaiśeṣika school stressed only *avyabhicaritatva-sambandha*. They have no liking for the Buddhist concept of *avinābhāva*. *Avinābhāva* means that without the *sādhya* one cannot imagine the presence of the *hetu*. In other words *avinābhāva* means one cannot be there without the second. I think that in essence *avinābhāva* and *avyabhicaritatva* are not different. If the *hetu* is naturally connected with the sādhya it cannot exist when the *sādhya* is absent.

In an inference *pakṣadharmatā* is another necessary factor along with *vyāpti*. In case we happen to possess the knowledge that two objects or objective characters (say X and Y) are such that Y exists where X does (*vyāptijñāna*) and also the knowledge that a particular thing possesses X (*pakṣadharmatājñāna*), the inferential knowledge arises to the effect that this particular thing also

1. HIL, p. 428.

possesses Y. From this it is clear that *pakṣadharmatājñāna* is usually a judgement of perception. Hence the problem of acquisition of the knowledge that a particular mark (*hetu*) resides in the locus (*pakṣa*) in which we want to prove the presence of the *sādhya* does not present any serious difficulty. But this knowledge in itself is not sufficient. In addition to the knowledge of *pakṣadharmatā* we should also possess the knowledge of *vyāpti*, *i.e.*, the knowledge that the *hetu* is invariably connected with the *sādhya*. In fact the smoke (*hetu*) being present in a locus must be known to have the *vyāpti* with fire (*sādhya*)—*vyāpti-viśiṣṭa-pakṣadharmatā*.

The statement of invariable concomitance is not a simple, assertoric judgement. It is a necessary judgement. If the relation between *hetu* and *sādhya* were not necessary, how could the conclusion be certain ? That the relation between the two is necessary implies that it is universal. That "invariable concomitance" means a necessary and universal relation holding between *hetu* and *sādhya* it is not a summary statement of the sum totality of observed events; and also not the "short-hand" of 'Lucy is observed to be mortal', etc. It does not refer merely to the observed cases but to unobserved ones as well. Thus invariable concomitance contains a leap from the observed to all, observed and unobserved cases. It contains a hidden prediction of the unknown events on the basis of the known ones. How is it possible ? Nyāya points out that generalisation always precedes deductive conclusion. It is nothing but the discovery of the universal relation holding between *hetu* and *sādhya*. But a man living in an isle abounding in coconut trees cannot infer fire from smoke. When he infers fire he does not observe the relations of invariable concomitance. But when he observes the relation of invariable concomitance, he does not infer when he tries to deduce the conclusion that presupposes *sādhya* as its antecedent condition. But there flashes in his memory a judgement. On this ground he arrives from the known cases in general at the so far unknown case of the presence of fire when he perceives smoke.

II

A SURVEY OF THE BUDDHIST POSITION

The realistic position of the Nyāya-Vaiśeṣikas boils down to two points :

(a) They all maintain that universals are real and objective in individuals, and they have an abiding existence in contrast to individuals which are transitory. (b) Words do not denote any individual object directly. They denote the individual only through the universal. The theory of universal as referent is sought to be established by refuting the view that the individual entities are the primary objects of knowledge and language.

The Buddhists, on the other hand, disagree with the realists on both these issues. They insist that if the universal is to be accepted as real and also distinct from the particular, then, they both must appear to be so. But this is never the case. Contrariwise if they are regarded as identical, there is no point in accepting the universal over and above the particular.[1] Momentariness being the basic tenet of the Buddhists, nothing eternal can be accepted by them. Therefore the realistic theory of the universal as objective eternal existant is against the Buddhist tradition. That is why this theory of universal has been criticised by the Buddhists The Buddhists accept the category of universal but for them it is a mere concept (*vikalpa*) and a mere name (sañjñā) having no eternal ontological status. For the Buddhists the real is *svalakṣaṇa*, a discrete momentary existence, which is beyond conceptual and linguistic operations. Thus the referent or meaning of a word is a particular which excludes or negates the other. This view is known as *apoha*. Though universal can be regarded as a referent of a word, it is nothing more than a conceptual construction *vikalpa*). Every universal is a construction which consists in the exclusion of every other such construction. As Dharmakirti states,[2] a universal is in its very essence the exclusion of the others.

Apoha and Inference

The Buddhist logicians maintain that every word means the negation of its own negation. For example, 'cow' means nothing but 'not-not cow' and therefore to understand the meaning of a word is to know the negation of its negation. The word 'blue-lotus' means the exclusion of all that is non-blue and non-lotus. This

1. T.S. 804-810.
2. arthānāṁ yacca sāmānyam anya-vyāvṛtti-lakṣaṇam/yanniṣṭhāsta ime śabdā na rūpaṁ tasya kiñcana/P.V. II. 30.

term not only excludes the lotuses that are not blue but also excludes those things which are not lotuses, says Karṇagomin.[1] Thus what is intended by the theory of *apoha* is that a word does not mean a positive thing like 'X is A' or merely a negative thing like 'X is not A' but a positive thing qualified by the exclusion of the opposite like 'X is not-not A'. The relation between the predicate viz. 'not-not A' and the subject viz. 'X' is not ultimately real (*pāramārthika*) but only dialectial (*saṁvṛtisat*).

The Buddhist theory of *apoha* has a very interesting implication. It is not a negative but a dialectical approach to thought and language. According to it every concept, every term, and every proposition is dialectical or discriminatory in nature. Affirmation and negation are mutual exclusion and yet they are so related to each other that one involves the other.

As Dharmakīrti holds there can be no affirmation of the thing 'A' which does not exclude the other 'not-A', nor can there be a negation of that which cannot be affirmed.[2]

Again, between the schools of Nyāya-Vaiśeṣika and Pūrva-Mīmāṁsā, there is one thing which is common, i.e. both of them maintain that the universal is an independent objective reality and it is necessary for the existence of the particular. The only point on which they disagree is that of the mode of relation between the two. The school of Buddhism, on the contrary, refuses to recognise the reality of universals. They maintain that the so called universals are subjective construction (*vikalpa*) which are expressible in language. They are not real entities subsisting extramentally as the realist assumes The external real is the *svalakṣaṇa*, which is a particular, unique in itself, an instantaneous being. No two *svalakṣaṇas* are similar in nature. The notion of similarity is nothing but a fancy due to *Kalpanā*. There is no identity also in reality because there is no recurrence in reality. The reals are non-repetitive in nature.[3]

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1. Yathānutpalād vyāvṛttā utpalabhedās ta eva punar anyato py anilād vyāvṛttimantaḥ pratibhānti. —Karṇagomin, p. 182.
2. Sarve bhāvāḥ svabhāvena sva-sva-bhāva-vyavasthiteḥ/svabhāva-parabhāvābhyām yasmād vyāvṛtti-bhāginaḥ/ PV. 3.40
3. T.S. 723 ; T.S.P. on it.

Dharmakīrti rejects[1] the realist conception of universal on the ground that if the universal is regarded as an objective entity, then its relation to the plurality of particulars or individuals becomes unitelligible. The question that arises here is whether a universal is confined to one particular or is it ubiquitous. In the former case it can further be asked : how can a universal which is said to be eternal be connected to a particular which comes into existence and ceases to exit ? The universal being eternal cannot be born with the temporal particular. Nor can, it be maintained, the universal migrate from one particular to another particular, because this would mean that the particular to which the universal migrates would remain bereft of a universal initially. In other words, the new-born particular which becomes related to its universal remains without it at least in the first moment of its existence.

Again, if the universal is accepted as impartite, then it is wrong to say that it remains partially in the original locus and partially migrates to new-born things. If the second alternative is accepted and universal is regarded as ubiquitous, then it must exist everywhere, where there is a corresponding particular existing or not existing. In that case the universal should be experienced everywhere, at all times. But this is not the case. Further, this should imply that there is nothing like empty space, but this does not seem to be correct.

Dharmakīrti not only attacks the realist's conception of the objectivity of universal, but also the theory about the relation between particular and universal. According to the realist the universal subsists in all its different particulars. If particulars are mutually different then not only can it be asked as to how one universal exists in different particulars but also how can several entities have an identical universal. The crux of the whole issue is whether the universal is identical with or different from its particulars. In the former case either the universal will cease to be a common character because being identical with particulars it would be just one particular, or the particulars will cease to be different as all these particulars being the same as the universal, they would be one as the universal is. In both these cases the concept of universal

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1, P.V. 2.5-54.

becomes meaningless. If to avoid this consequence, universal is regarded as different from particulars, then their relationship becomes inexplicable.

According to Dharmakīrti, all relations are conceptual and reducible either to identity (*tādātmya*) or to causality (*tadutpatti*). If this relation between a universal and particulars is not that of identity can it be that of causality ? Dharmakīrti concludes that it cannot be so as neither of the two is the cause of the other. Thus, according to him, the universal is a non-entity.[1]

The Buddhist thinkers argue that the realists' contention about our perceptual cognition containing a distinct reference to nniversal, apart from the configuration of the particular, is a hollow assertion unsupported by experience. Universal taken as a presupposition of the existence of particulars is never perceived. What is perceived is the shape, size, colour etc., of the particular; the universal is none of them. It cannot be established that the particular having shape, size, colour, etc. can give us the knowledge of a shapeless, sizeless, colourless, universal. If the universal is regarded to have the same characteristics as are possessed by the particular then there is left no means of distinguishing them from particulars.

The Buddhists maintain that universality is infact the sign of unreality. Whatever is conceived as universal or common must necessarily be regarded as unreal because then it will be only a mental construction. Further, in the Buddhist view whatever is real is momentary, a universal which is eternal is only a fiction of imagination.

The Buddhists not only reject the Nyāya-Vaiśeṣika contention that the universal is one and eternal and exists in multiple objects, but they also reject Kumārila's thesis that even in negation there is an objective universal, as negation is nothing but a positive entity, bereft of any particular determination.[2] The Buddhist rejects this universal. The negation could have been held to be another universal but the universal being a mental construction its negation would simply mean the absence of the mental construction.

1. P.V.V. on P.V. II, 42.
2. S.V. Apoha, Sl. 11.

The Buddhists are quite insistent in maintaining that the particulars are absolutely distinct from one another and have nothing in common ; so the idea of class-character or universal cannot be generated by them. The particulars may have causal efficacy in regard to their own ideas but as this efficacy varies in each particular the idea of universal cannot be accounted for by reference to these particulars. Though the particulars are absolutely distinct and discrete, still they are capable of generating a common idea or an identical concept owing to a determinate constitutive energy present in each of them. But this identity as idea or concept does not warrant the introduction of a universal in things. For example, different drugs can prevent or cure a particular disease, but that does not mean that these drugs have some universal in them which makes them effective in one and the same case. The point is that uniformity does not necessitate the introduction of the notion of the objectively real universal. Thus, for the Buddhists, the concept of universal is nothing but an intellectual fiction hypostatised as an objective reality existing in its own right, independently of the thinking mind. Every such conceptual construction is different from any other conceptual construction. For example, the idea of a cow-universal shows that every particular cow is different from and exclusive of all that is non-cow. So the cow-universal as a concept can be reduced into the exclusion of non-cow and thus be equated with the concept of 'not-cow'. This is what Buddhists call *apoha*, a theory with which they propose to replace the realist's theory of universal.

As has been stated above, the Nyāya-Mīmāṁsā group of philosophers regard similarity among particulars a positive proof of existing identity, which they all call universal. The Buddhists of Dignāga-Dharmakīrti group take similarity among particulars as a proof, at its best, of only our knowing these particulars is an identical fashion, and no of there being something identical present among particulars. Can similarity be due to identity among things similar, or can it only be explained in terms of knowledge mechanism ? This is the basic question to which answers are given differently.

The idea of similarity implies difference, as similarity is not

the same as identity. Hence the Nyāya accounts for difference with the help of *samavāya* and the Mīmāṁsā explains it by resorting to the view that for similarity difference is natural. The universal and the particulars are not identical ; there is also a difference and the natural relation does the same thing but in a less sophisticated fashion. The Buddhists, however, maintain that similarity is due to the way of our knowing differences among various particulars and various groups of particulars. Since in every act of articulate knowing there is identity of the way of knowing involved, we cannot know the particular in a unique way. But what about our knowing one group of particulars as different from other groups ? How is cow known as different from horses ? In order to explain these questions pertaining to the difference part of similarity-notion the Buddhists introduce the concept of class as a part of the knowing mechanism. But this is required by them only to explain the difference. They explain it by saying that the identity in the way of knowing is to be explained in terms of the negation of what does not figure in a given knowledge. Thus what I know as cows, horses, etc. are not given. Thus what I know at a given time is different from what is not given. The group of cows is in this sense different from other groups.

Kinds of Inference

However, the Buddhists maintain that the universal is necessary as the inferencial knowledge is based on the relation of *tādātmya* or *tadutpatti*. Since inference is the cognition of the inferred object on the basis of a *hetu* inseparably connected with it, every inference is based upon the necessary relation between a *hetu* and *sādhya* constructed in *kalpanā*. This necessary connection can be of two types : One thing can be necessarily connected with another thing if one is either referentially the same as the other, or it is the effect of the other. The first type of connection is called *tādātmya* and the second *tadutpatti*. The Buddhists exemplify the first by the following inference, "This is a tree, because this is a *śiṁśapā*. Here the two terms 'tree' and '*śiṁśapā*' refer to an identical object though they differ in respective modes of reference. The two terms are connected by virtue of a particular connection named *svabhāvapratibandha*, which means that the

things referred to have such a nature (*svabhāva*) that the existence of one is the ground for the deduction of the other. In the above example, to be a *śiṁśapā* is sufficient for it also to be a tree. In other words, of the two terms the dependent and the one upon which there is dependence, the very existence of the dependent is sufficient to prove the existence of that upon which there is dependence. The fact of anything to be a *śiṁśapā* depends upon that thing being a tree, or *śiṁśapā* is by nature such that it cannot be anything but a tree. This can be explained therefore as follows : to be a *śiṁśapā* is to be nothing other than a tree or to be 'not-not tree'. We infer it to be a tree because while cognising it as a *śiṁśapā* we cognise it to be 'not-not tree' though we use two separate terms. *Śiṁśapā* has an existential tie with all that is 'not not tree'. It can be maintained therefore that in this leap from *śiṁśapā* to tree a definite role is played by a relation or existential tie that binds together a *śiṁśapā* on the one hand all that is other than not-tree on the other. The not-tree is a class conceived negatively. Its members share in common the negative character of being other than tree. A particular tree is then something which non-trees are not. A universal is binding force and here things are bound together in a negative sense. A *śiṁśapā* is thus tied to this negative class in a negative way. A *śiṁśapā* is such a tree which is other than not-tree. In this case their relation would be natural one.

In an inference based on causal relation (*tadutpatti*) one infers the existence of a cause on the basis of an effect. For example, on seeing smoke we infer that there must be fire. This is possible only when one knows that smoke is related to fire in such a way that it would never have existed had there been no fire. But the inference would not be possible if a particular thing were to be related to another particular thing because in the theory of momentariness no two particulars in the same sense can ever exist together. Therefore only the class of one type of particulars (e.g. smoke) could be said to be related to the class of another type of particulars (e.g. fire). But these two classes are obtained only by negating particularity of particulars supposed to be members of a class The class of smoke in reality only means not particular smoke, the class of fire means not particular fire. These two classes, conceived nagatively as denying particularity,

provide the ground for the formation of *vyāpti* or general rule which makes inference possible.

To sum up, the real relation is that relation where one of the two things so related does not exist without the other. In this expression of reality we find two possibilities : (a) one may be related exactly in the same manner as the other is related or (b) their relation to each other may vary. The example of the former is that whatever is knowable is also speakable or whatever is speakable is also knowable, and that of the latter is the relation between smoke and fire, as smoke is invariably related to fire but between fire and smoke the relation is accidental. So the Naiyāyikas held that these relations are diverse, any relation can be found out holding two things together. But these relations spring up, according to the Buddhists, from the general nature of things themselves and they are of two types : (a) *svabhāvasambandha* (where the very existence of a thing involves the existence of another thing) e.g. red involves colour. This implies that the lower resides in the higher or vice-versa and (b) *kāraṇasambandha* (causal relation). It means that the existence of an effect is due to the existence of a cause ; e.g. smoke cannot be without fire. In this case if we substitute the lower for effect and the higher for cause, then thus our argument would be : if we know the lower (i.e. smoke) then we know the higher (i e. fire). It means that the Buddhists stressed only *kārya* from which we can infer *kāraṇa*. They point out that we can know a *kārya* from *kāraṇa* only when we know all the conditions of *kāraṇa*. This is not possible because only some of the conditions can be known but others will remain unknown. That is why the Buddhists propound the view that from a kārya kāraṇa can be inferred. While defining *hetu* as that which must not qualify any object within the scope of the heterogeneous class[1] the Buddhists have kept in view only two possibilities, viz. *svabhāva* and *kārya*. In both these the *hetu* must not cross over to *vipakṣa* ; in the former because the existential tie prevents it and in the latter because an effect in all its specification can be produced only by an equally specified cause. Therefore any other kind of *hetu*, however desired it may be, cannot be

1. Hetur vipakṣād viśeṣaḥ.

accepted as *sad-hetu* for the purpose of inference, as there is always a possibility of it becoming a property of an object falling within the heterogeneous class. Thus, for example, having two horns cannot be a valid *hetu* for inferring a cow, as that may also be the property of a non-cow, i.e. a deer. A *sad-hetu* must exclude the heterogeneous class completely.

Interaction Between Nyāya and Buddhism

Uddyotakara[1] criticises this definition pointing out that it involves (a) the acceptance of the validity of the invalid *hetu*; (b) the rejection of the validity of the valid *hetu* and (c) the rejection of other objects concomitant with what is desired to be proved (*sādhya*).

Though the Buddhist definition of *hetu* does not succeed in indicating its three characteristics as mentioned earlier yet it excludes that which fulfils all the three conditions of the valid *hetu* yet it subsists only in the part of *sapakṣa*.

If the *hetu* is found only in one part of the *sapakṣa*, it can mean that the other part, where the *hetu* is not found, is not covered by this definition. In that case, says Uddyotakara,[2] just as that which subsists in a part of the *sapakṣa* be accepted as a valid *hetu*, so would be also that which subsists in only a part of the *pakṣa*, the consideration being the same, i.e. which makes for the validity of the *hetu* subsisting only in a part of the *pakṣa* only (e.g. the *hetu* in the reasoning—'The atoms are eternal, because they have odour'). Take an inference where the *hetu* is 'the property of being produced'. This *hetu* would not be valid because it is found in things other than atoms also. If the suggestion of the advocate mentioned above is accepted, then the validity of the *hetu* that he wishes to ensure, e.g. 'being produced by effort' is undoubtedly ensured ; but then the validity of the *hetu* that he wished to reject, e.g. "having odour", has to be accepted. Thus the exclusion of the desirable and the inclusion of the undesirable *hetu* vitiates the definition.

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1. GNP, pp. 241-42.
2. *ibid.*

Lastly, if it is held that the expression 'not subsisting in the *vipakṣa*' is also meant to be for the purpose of emphasis, then we must ask what is emphasized here ? It is meant, says the advocate of the definition, to underline that the *hetu* should be non-subsistent in the *vipakṣa* and that it must be non-subsistent in the *vipakṣa* only. In the latter case we will have to accept as valid the *hetu* in the reasoning 'This is a cow, because it has horns'. The *hetu*, having horns, is non-subsistent only in the *vipakṣa*, as all these animals that are hornless are also not cows. Obviously, the *hetu* cannot be valid, as the class of hornless animals, which is *vipakṣa* includes animals other than cows as well as cows without horns. In the former case the expression 'The *hetu* subsists in the *sapakṣa*' becomes superflous. Of the three expressions the *first* '*subsisting in the pakṣa*' is for the purpose of denoting invariable concomitance ; the *thi·d*, '*the hetu does not subsist in the vipakṣa* is for the exclusion of what subsists in a part of the *vipakṣa*, the *second* expression '*the hetu subsists in the sapakṣa*' has no useful function to perform.

The definition of the *hetu* as distinct from the *vipakṣa*, says Uddyotakara,[1] cannot justify the practice of the advocates of the definition. For example, the *hetu* that is put forward for proving the non-eternality of everything from the point of view of the Sautrāntika cannot fit in with this definition. If every thing is non-eternal, there can be no thing where non-eternality can be said to be absent. The Buddhist should therefore explain what he means by the term '*v:pakṣa*' used in the definition. If no such thing as *vipakṣa* is possible, says Uddyotakara, no meaning can be attached to the term *vipakṣa* as used by the Buddhists. Again, when no *vipakṣa* is possible, and every *hetu*, such as 'being a product' and the like, is such as is always present in the *pakṣa* and in the *sapakṣa*, it is difficult to determine from what such a *hetu* could be excluded. In fact, the property of being a product, under the circumstances, should be spoken of as '*sāmānya*' and not as '*viśeṣa*'. Thus it makes no sense to say that the *hetu* is that which cannot qualify any object in the scope of the heterogeneous class.

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1. *ibid.*

In the light of this detailed examination of the Buddhist definition of the *hetu* 'that which cannot qualify any object within the scope of the heterogeneous class,' Uddyotakara concludes that it either imparts the character of the valid *hetu* to that which is not really so, or it excludes that which is really so, or it contradicts the Buddhist doctrine.

The second definition of the *hetu*, as given by the Buddhists, is : that which subsists in the *sapakṣa*, in two ways, and which does not subsist in the *vipakṣa*.[1] Its subsistence in the *sapakṣa* is in two ways (a) entirely or (b) partially.

According to the Buddhists a valid *hetu* must fulfil three conditions : (a) subsistence in the *pakṣa* (b) subsistence in the *sapakṣa* and (c) non-subsistence in the *vipakṣa*. The entire and partial subsistence covers the first two conditions and thus the definition given above is claimed by the Buddhists to guarantee a correct *hetu*.

The Buddhist definition, as Uddyotakara observed, does not guarantee a correct *hetu* with its three characteristics on the following grounds. There is no word in the definition to indicate that the *hetu* should subsist in the *pakṣa*. It is true that the advocates of this definition have declared that practically every *hetu* valid or invalid alike, must subsist in the *pakṣa*. But even this assertion does not mean that it is only what subsists in the *pakṣa* that can be a *hetu*. All that it means is that what does not subsist in the *pakṣa* is not a *hetu*, either valid or invalid. This, the Buddhist argues, is certainly obtained by implication . When the words of the assertion are construed to mean that what does not subsist in the *pakṣa* cannot be a *hetu*, valid or invalid, it is certainly implied that the *hetu*, valid as well as invalid, must subsist in the *pakṣa*. It is true, says Uddyotakara,[2] that the idea that it should subsist in the *pakṣu*, is obtained by implication, but there is nothing to imply that this subsistence is invariable All that the sentence means is that what does not subsist in the *pakṣa* cannot be a *hetu*, and this, in turn, can only imply that every *hetu* may subsist in the *pakṣa*. The possi-

1. yaḥ samānajātiye dvedhā cā saṅistadatyayaḥ.
2. GNP, p. 247.

bility of such subsistence is two-fold : invariable (i.e. every *hetu* must subsist in the *pakṣa* only), or not invariable i.e. it may subsist in the *pakṣa*, but also in the *vipakṣa*). If the definition merely indicates the two-fold possibility, it would imply that even an undersirable *hetu* would have to be accepted as true, even though it may not necessarily subsist in the whole of the *pakṣa*.

The validity of the *hetu* subsisting in part of the *pakṣa* only, says the Buddhist, is certainly not implied; when it is distinctly stated that the *hetu* must subsist in the *pakṣa*, such a *hetu* alone is implied as true, and certainly that which subsists in part of the *pakṣa* only, cannot be said to be one that must subsist in the *pakṣa*. This, says Uddyotakara, is not right. When the Buddhist emphasizes that the *hetu* must subsist in the *pakṣa*, what he has in mind is the contingency of a fallacy of the *hetu* and not so much of the *hetu* itself. He means merely to differentiate between valid and invalid *hetu*. The latter would have to be excluded as a *hetu* since it does not subsist in the whole of the *pakṣa*.

If the intention of the Buddhists is to emphasize both the exclusion of the partially subsisting *hetu* and the differentiation between the valid and invalid *hetus*, then they should have used the phrase that the *hetu* should subsist in the *pakṣa* and the *sapakṣa*. For, when the Buddhist has already emphasized the invariable concomitance he has stated that the *pakṣa* as predicated by the *hetu* is already determined. It is only when there is no such determining with regard to the predicating *hetu* that there is a two fold possibility of its subsisting in the *sapakṣa* and the *vipakṣa*.

The Buddhist insists that in order to avoid a contingency whereby the definition might cover an undesirable *hetu*, it is necessary to add the qualification that it should not subsist in the *vipakṣa*. But then, asks Uddyotakara, what is the justification for the qualification that it should subsist in the *sapakṣa* ? If it is for the purpose of indication of mere possibility of the *hetu* subsisting in the *sapakṣa*, this indication of mere possibility would keep it undetermined. In fact, mere possibility of subsistence would imply both entire and partial subsistence. Under the circumstances, no useful purpose is served by keeping this expression of wide denotation, when entire subsistence, which is duly determined, is what is implied by the non-subsistence in the *vipakṣa*. In any case, the

phrase in 'two ways' is redundant, as to say that a thing subsists obviously means that it subsists entirely or partially.

The phrase, 'subsisting in the *sapakṣa*', argues the Buddhist, is added for the sake of accuracy. This argument, says Uddyotakara, is as unhelpful as the others. If the emphasis means that the *hetu* must be subsisting in the *sapakṣa*, the *hetu*, such as 'the property of being produced by effort', used by the Buddhist to establish the non-eternality of the things, will not be valid; for, this property is present in some and not present in other non-eternal things. Such a property will have to be excluded wherever it does not subsist in all cases of the *sapakṣa*. For example, it makes no sense 'Feed the Brahmins only and the Kṣatriyas also'. If, on the other hand, the *hetu* is restricted to its subsistence in the *sapakṣa* only, then the other two qualifications are unnecessary, as one of them is, in fact, contrary to the sense or the qualification in question, and the other is already implied by the subsistence in the *sapakṣa*.

If the Buddhist intends to lay emphasis on the phrase 'in two ways', we must ask : What is the meaning of this emphasis ? Does it mean that the twofold subsistence is in the *sapakṣa* only, or that it should subsist in the *sapakṣa* in two ways ? If it means that the *hetu* should subsist in two ways in the *sapakṣa* and nothing else—then the twofoldness does not pertain either to any other *pakṣa* or to the *vipakṣa*. In that case the Buddhist should not keep the expression in his definition, 'subsisting in the *sapakṣa*'. This subsistence is already implied. ex hypothese, by the emphasis laid upon the phrase 'in two ways'. As regards the possibility of the subsistence of the *hetu* in the *sapakṣa*, this also is already implied in the very first qualification, viz. the *hetu* should subsist in the *pakṣa*. Further, since the phrase 'in two ways', according to Buddhists, precludes the two-foldness of the subsistence in another *pakṣa* and that of non-subsistence in the *vipakṣa*, the phrase itself implies the possibility of subsistence in the *sapakṣa*. And this means that the qualification 'subsisting in the *sapakṣa*' becomes superfluous.

In order to avoid unnecessary fuss about every single word of the definition, says the Buddhist, let us not insist on the problem of the twofold subsistence of the *hetu* in the *sapakṣa* only. Even so, replies Uddyotakara, the two phrases in thc definition, i.e. 'subsi-

sting in the *sapakṣa*' and 'in two ways', will have to be rejected. This makes the Buddhist look like a man who is trying to push his goitre only succeeds in having his eye-balls protruding. So if he emphasizes the phrase 'in two ways', explaining it to mean that the *hetu* should subsist in the *sapakṣa* in two ways only he will have to reject such valid *hetus* as 'being a product', for such *hetus* do not subsist in two ways only' (i.e. the property of 'being a product' subsists in non-eternal things in only one way i.e. in their entirety and never in part).

Further, in insisting on the definition with three terms, the Buddhist excludes that *hetu* which fulfils only two eonditions—the same *hetu* which he himself has accepted as valid in his system. Under his own definition, the negative *hetu* ceases to be true *hetu*, as it does not subsist in the *sapakṣa* in two ways. Since the validity of the negative *hetu* has been so laboriously established by the Buddhists themselves, they cannot now reject it because of the difficulties they encounter. If, in order to avoid all these difficulties, no emphasis is to be laid on any of the terms of the definition, then the Buddhist might as well accept such *hetus* as subsist in only a part of the *pakṣa* or anywhere else.

The Buddhist gives another definition of the *hetu* which is as follows : The *hetu* is that which subsists in the *pakṣa* and is concomitant with a part of it [1]

The arguments given against the second definition equally hold good against this definition. This definition, as it stands, does not take *pakṣa* into account, and this is a serious defect in any definition of the *hetu*. Secondly, the expression '*a-san tadatyaye*' is exactly similar to the expression '*vipakṣe nāsti*' of the previous definition; and it is therefore open to all those objections that have been raised against it.

Eventually the Buddhist provides another definition of *hetu*—'the hetu is that which is indicative of the presence of a character which is never apart from like things.'[2]

Here the form 'which is never non-concomitant with homoge-

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1. grāhyadharmas tadaṁśena vyāpto hetu. P.V. III. 1.
2. tādṛg avinābhāvidharmopadarśanam hetuḥ.

neous things' indicates the following characteristic : Not subsisting in the *vipakṣa* and subsisting in the *sapakṣa*; the term 'indicative of the presence' denotes presence in the *pakṣa*; thus we get the *hetu* with its three characteristics.

It is true that the expression 'which is never non-concomitant with homogenous thing' indicates that the property does not subsist in the *vipakṣa*. But it does not necessarily follow that it subsists in the *sapakṣa*. In the absence of any expression whieh can indicate this subsistence in the *sapakṣa*, we would have to treat audibility as a true *hetu* for establishing the non-eternality of sound, as audibility never subsists apart from non eternal things. The only condition that can exclude such unique or singular *hetus* from the scope of the true *hetus*, viz., it should subsist in the *sapakṣa*, is absent from the definition.

Even if we were to accept that the expression 'never non-concomitant with homogeneous things' does indicate 'subsistence in homogeneous things' what is there to indicate that the *hetu* must subsist in the *pakṣa* itself ? It cannot be argued that this indication is provided by the word '*upadarśana*'. Such a word has certainly no power to imply that it is indicative of the presence in the *pakṣa* or elsewere.

If the word is not indicative of the presence in the *pakṣa*, asks the Buddhist, where else could the presence be of which it could be indicative ? Wherever there might be a possibility of its presence, says Uddyotakara, such a possibility can certainly be in the *sapakṣa*. The definition would then come to mean that the *hetu* is that which is never non-concomitant, in the *sapakṣa*. But then we would have to accept visibility as a valid *hetu* for proving non-eternality of sound. According to the Buddhist, visibility never subsists in things other than non-eternal things.

For the sake of argument let us grant, says Uddyotakara, that the word '*upadarśana*' does indicate the presence in the *pakṣa* of the property which is never non-concomitant with the *sapakṣa*. How do we then exclude that *hetu* which subsists in a part of the *pakṣa* only ? This cannot be done by the same word 'upadarśana'.

The Buddhists have cited two examples of the *hetu* (a) the character of being produced by effort as proving non-eternality,

(b) smoke as proving fire, The first cannot be a *hetu*, because the property in question does not subsist in the *pakṣa*, sound. It is not a property of sound, as there is no sound that is produced by effort. In fact, every sound is produced by combination and disjunction. To make it clear according to the Naiyāyikas sound is produced by conjunction and disjunction. A sound thus produced is followed by another sound until it reaches the sense-organ or an obstacle. The effort may be an indirect cause of sound, but in that way all things may be said to be the indirect cause of sound. It is therefore futile to have such qualification as 'produced by effort'. One might as well say : 'Sound is non.eternal, because it is produced'.

When the Buddhist gives 'the character of being produced by effort' (*prayatnānantarīyakatva*) as a *hetu* in support of the non-eternality of sound, this reason is expressed by means of an abstract noun What does this abstract noun mean ? Production or perception ? If it means production, that alone would be enough to establish non-eternality. If the abstract noun refers to perception, this alone would be sufficient to establish non-eternality; for the Buddhist does not recognise the perceptibility of any abstract object. If 'being produced' were not invariably concomitant with non-eternality then alone would it have been useful to add the qualification 'by effort'. Things perceived are not of two kinds, as, according to the Buddhists, everything is non-eternal; nor are they of two kinds—perceived after effort. It is not open to the Buddh.st to say that there are things like '*ghaṭatva*', which are eternal and also perceived after effort, as he does not accept anything as eternal. Thus the abstract noun '*prayatnāntarīyakatva*' cannot serve as a valid *hetu*. Further, the character of being produced by effort is not invariably noncomitant with the *pakṣa*. The term 'sound', which is the *pakṣa* of the reasoning in question, includes all sounds, but all sounds are not produced by effort. If, then, the reasoning is said to refer to a particular sound—and not to all sounds—the *hetu* 'being produced by effort', would apply only to the first sound unit, and not to the endless sound units that follow each sound unit. This means that the *hetu* does not subsist in the whole subject. It may be suggested that particular sound which is produced by effort is certainly 'non-eternal'. But then we will

need something other than the character of being produced, as the true *hetu* should subsist in the whole pakṣa.

Pakṣa—A Point of Controversy

But Dignāga and Dharmakīrti hold that a *hetu* is a characteristic of *pakṣa* (*pakṣa-dharma*) and is pervaded (*vyāpta*) by a part of that *pakṣa* (*tadaṁśena*) and of necessity it is of three kinds because of the determination brought by invariability. Thus other *hetus* are only apparently so.[1]

Pakṣa is that which possesses characteristics; though it is only a part of the total complex of the thing and its characteristics. Yet the part is treated as the whole by transferred epithet (*upacāra*). It may be pointed out that such transference serves no purpose, but this is not correct. This transference serves the purpose of denying that the *hetu* is the characteristic of entire thing. It also makes us aware that the *hetu* being a part of the thing possessing it is a characteristic worthy of being known by transferred epithet in terms of that thing. This way visibility etc . is denied as *hetu*.

It may further be pointed out that by mentioning the characteristic its locus, the thing, is by implication established. In spite of this the mention of the thing possessing a characteristic obviously establishes that thing is *sādhya*, i.e. it is a thing to be established by inference But this may not be so. It is equally obvious that the thing may also be taken to possess the characteristic of example. Because a *hetu* is pervaded by a part of the thing so its existence in the thing possessing the characteristic of the example may also be established. Thus when the word 'thing possessing a characteristic' is expressly mentioned it means the thing possessing a characteristic is the thing to be established by inference. Though this point is established by implication yet the mention of the word 'thing possessing a characteristic' might perhaps be taken to indicate some rule. As has been done in the following case : When it is said that a *hetu* must exist only in instances belonging to one class it is implied that it must not exist in instances belonging to another class. In spite of this when it has been expressly stated that a *hetu* also must not exist in the instances belonging to an opposite class, where the *sādhya* does not exist, then this second statement is taken

1. GNP, p. 250.

in the sense of a rule completely excluding the presence of *hetu* in the opposite class. Though by the force of the use of 'thing possessing characteristic' the *pakṣa* is meant, still the word '*pakṣa*' is used instead of 'thing possessing characteristic' in order to cut short the longer process of understanding *pakṣa*. Somebody may say that by calling a *hetu* as the characteristic of *pakṣa* a *hetu* becomes exclusive to *pakṣa*, as any characteristic which is qualified by its relation to *pakṣa* has no presence in anything else. But this is not correct. This interpretation may be rejected by saying that the qualification put by *pakṣa* on *hetu* is the qualification by the exclusion of the non-availability of the adjective, as in the case of 'Caitra is an archer', but not by the exclusion of the relation with others, as in the case of 'Pārtha is an archer'.

'A part of *pakṣa*' means that the *hetu* is the characteristic of *pakṣa*. It is a part in the sense that speaker intends it to be so and not that it is actually its part. The word '*pakṣa*' does not mean the totality of the thing and its characteristics.

Pervasion means that the pervading one always exists in the *pakṣa* or what is pervaded exists only in the *pakṣa*. From this it follows that correlation and non-correlation between *pakṣa* and *hetu* are determined in view of their nature. on the basis of appropriate evidence (*pramāṇa*) and so also is the characteristic of *pakṣa*.

These *hetus* are three in number, characterised (1) as effect (*kārya*), (2) as its own nature (*savabhāva*) and (3) as non-awareness (*anupalabdhi*). As for example (1) 'Fire exists here, because of smoke', (2) 'This is a tree, because it has the characteristic of *śiṁśapā*'. (3) 'At a particular place jar does not exist, because there is no awareness of jar; though the jar has the characteristic of becoming an object of awareness'. Had the jar been existing, one could be aware of its existence but not otherwise. Therefore it means that non-awareness is in respect of a thing whose existence is capable of being an object of awareness.

III

HETUCAKRA

We may now recapitulate the Buddhist position as follows :

(1) The *hetu* must cover the *pakṣa* ; (2) the *hetu* must be

present in *sapakṣa* of the predicate ; and (3) the *hetu* must be absent from the *vipakṣa* of the predicate.

Dignāga in his *Hetucakra-Ḍamaru* points out that a *hetu* or quality of the subject of inference may take three forms, according as it does or does not reside in two possible ways of *sapakṣa*. This implies that the two ways in which M (*hetu*) does or does not reside in *sapakṣa*, XP's, are, first, residence or non-residence in some (not all), and secondly, residence or non-residence in all. This gives a three-fold relation of *hetu* (M) to *sapakṣa* (XP), viz. (i) residence in the whole *sapakṣa* ; in other words all XP is M ; (ii) residence in some *sapakṣa* (= non-residence in some), in other words some XP is M. ; (iii) non-residence in all, in other words, no XP is M. Again, in each of these three possible cases the *hetu* does or does not reside in the two ways in the *vipakṣa*. In other words, we can say that there is, similarity, in threefold possible relations of the *hetu* to the *vipakṣa*, X non-P, according as *hetu* (M) is resident in (i) all X non-P ; (ii) resident in some (non-resident in some) ; and (iii) non-resident in all ; i.e. not resident in any X non-P.

Combining this threefold relation to the *vipakṣa* with the threefold relation to the *sapakṣa* we get nine types of the '*hetu-cakra*'.

I

All SP is M
All XP is M
All X non-P is M (Inconclusive)

II

All SP is M
All XP is M (valid)
No X non-P is M.

III

All SP is M
All XP is M (Inconclusive)
Some X non-P is M.

IV

All SP is M
No XP is M (Contradictory)
All X non-P is M.

V

All SP is M.
No XP is M.
No X non-P is M. (Inconclusive)

VI

All SP is M.
No XP is M. (Contradictory)
Some X non-P is M.

VII

All SP is M.
Some XP is M. (Inconclusive)
All X non-P is M.

VIII

All SP is M
Some XP is M. (Valid)
No X non-P is M.

IX

All SP is M.
Some XP is M. (Inconclusive)
Some X non-P is M.

These nine combinations can be expressed in *Formal Logic* as follows[1] :

1. *Sādhyavyāpaka* : (PaH) =∼(Ex) (fx.∼gx).(Ex) (fx.gx)
2. *Sādhyāvṛtti* : (PeH) =(Ex) (fx.∼gx).∼(Ex) (fx.gx)
3. *Sādhyaikadeśavṛtti* : (PuH) =(Ex) (fx.∼gx). (Ex) (fx.gx)
4. *Sapakṣavyāpaka* : (SaH) =∼(Ex) (∼fx.hx.∼gx).(Ex) (∼fx.hx.gx)
5. *Sapakṣāvṛtti* : (SeH)=(Ex) (∼fx.hx.∼gx)∼(Ex) (∼fx.hx.gx)
6. *Sapakṣaikadeśavṛtti* : (SuH)=(Ex) (∼fx hx.∼gx).(Ex) (∼fx.hx.gx)
7. *Vipakṣavyāpaka* : (VaH) =∼(Ex) (∼hx.∼gx).(Ex) (∼hx.gx)
8. *Vipakṣāvṛtti* : (VeH)=(Ex) (∼hx ∼gx).∼(Ex) (∼hx.gx)
9. *Vipakṣaikadeśavṛtti* : (VuH)=(Ex) (∼hx.∼gx). (Ex) (∼hx.gx)

1. BFL, p. 18.

In this interpretation of *hetucakra* we find three expressions 'presence', 'absence', and 'both presence and absence' which are all obscure, particularly the last expression 'both presence and absence'. In Sanskrit formulae we have *Vyāpaka* (pervasive presence), '*avṛtti*' (absence) and '*ekadeśavṛtti*' (partial presence).

Here the Buddhists introduce two concepts concerning presence and absence. They are (a) *svabhāva* i.e existential ties and (b) causation. We have already mentioned these two. But for the sake of convenience these are as follows :

(a) Existential tie (i.e. *svabhāva*) is a relation where the very reference of both *hetu* and *sādhya* terms is one and the same thing. For example, "Sound is impermanent, because it is produced". This is to prove that a thing possesses the property 'A' (i.e. being impermanent) by pointing out that it possesses the property 'B' (i.e. being produced). In other words, being produced is the same thing as being impermanent. It would be wrong to suppose that tree and śiṁśapā are two things. What the term 'śiṁśapā' refers to is nothing but what the term 'tree' would refer.

(b) Causation : The other relation is causal relation where the existence of an effect is invariably due to the existence of a preceding thing called cause, e.g. "The hill is fiery, because it is smoky". This is to prove the existence of a cause 'A' by pointing to the existence of an effect 'B'. Here references of *hetu* and *sādhya* terms are distinct entities but both of them are bound together in a sequence ; one precedes and the other follows it.

Let us construct them first in the form of restricted predicate logic or the logic of classes. The formula is as follows : If the class *a* is included in the class *b* ; and the class *b* is included in the class *c*, then the class *a*, is included in the class c. The first formula can also be easily transformed in the propositional logic. If x possesses the property f, then x possesses the property g ; and if x possesses the property g, then x possesses the property h. This whole implies that if x possesses the property f, then x possesses the property h. This shows that Dignāga's *hetucakra* belongs to the first case, i.e. the logic of classes.

The *pakṣa* may assume two possible forms ; it may be either

singular such as 'Devadatta is a man' or it may be universal such as 'Indians are n en'. Let us construct the two forms in the logic of classes :

In fact there are two points which are common to singular and universal propositions i.e. that neither of them can be negative and that neither of them can be particular.

In the case of Dignāga these two forms were neither identified as one, nor very clearly distinguished ; the reason being that throughout his work the *pakṣa* is treated always as non-singular.

The Buddhist points out that among the three cases (viz. '*Vyāpaka*', '*avṛtti*' and '*ekadeśavṛtti*') only the first ('*Vyāpaka*'), is to be treated as valid one. The three '*Vyāpaka*', '*avṛtti*' and '*ekadeśavṛtti*' actually mean respectively 'affirmative', 'negative' and 'particular'. Among the three only the affirmative is considered valid An affirmative proposition includes both universal and particular affirmatives. This would mean that in either case *sādhya* and *hetu* must be bound together by nature (*svabhāvapratibandha*) in such a way that a *hetu* cannot exist with the *sādhya* (*avinābhāva*). This *avinābhāva* relation is possible by virtue of *svabhāva-pratibandha* and *svabhāva-pratibandha* holds good only in two cases viz. in *svabhāva* and in *kārya*.

In the process of explaining *hetucakra* Diganāga introduced the notions of '*sādharmya*' (similar instances) and '*vaidharmya*' (dissimilar instances). He used them to denote either the member of a class or the classes.

The word '*sādharmya*' or 'similar' refers to likeness to the subject in its possessing the property denoted by the *sādhya* and not the property denoted by the *hetu*. Secondly, similar instances are only similar to but not identical with the *pakṣa*. Therefore *pakṣa* itself should be excluded from the membership of the similar instances.

The term 'dissimilar instances' (*vaidharmya*) was defined by Dharmakīrti as : 'A case which is not similar is dissimilar—it can be different from it, contrary to it or be its absence'. Similar instances (*sādharmya*) were called by Dharmakīrti *sapakṣa*.

Dissimilar instances (*vaidharmya*) were *asapakṣa*. *Asapakṣa* is also known as *vipakṣa*.

Now we have four points relevant for inference, viz. *hetu*, *pakṣa*, *sapakṣa* and *vipakṣa* along with the two rules viz., those of *svabhāva* and *kārya*. Dharmakīrti in his *Hetu-Bindu* mentioned three rules or *niyamas* for testing the validity of an inference; these are the rules of *svabhāva*, *kārya* and *anupalabdhi*. The rule of *anupalabdhi* however may not be treated as an independent rule as it works only through *svabhāva* and *kārya*. Again to avoid the ambiguity with regard to the relation between *vyāpya* and *vyāpaka* the Buddhist introduces the concept of *avinābhāva*. This literally means 'no non-existenced'. This is the same as what we call *apoha*. In other words we can say that *avinābhāva* means that one cannot be present when the other is absent. With the help of *avinābhāva* the Buddhists try to reach certainty. On the other hand, the Nyāya-Vaiśeṣika holds *avyabhicharitatva* instead of *avinābhāva* for reaching towards the same goal.

IV

TRAIRŪPYA VS. PAÑCARŪPYA

Further, in order to understand Dignāga's *Hetu Cakraḍamaru* we have to clearly understand Dignāga's conception of '*Trairūpya*'. In fact, in the history of Indian logic we find two interpretations of the concept of *Trirūpya*, one in Praśastapāda and the other in Dignāga. Praśastapāda points out that "what is conjoined with *sādhya* and has been found in what possesses it, and is always absent in the absence of *sādhya*, is the mark (liṅga) which brings about inference. What differs from this in one or two aspects is lacking of the mark, being either contradictory, untrue or inconclusive, said the son of Kaśyapa".[1] This view is very close to that of Dignāga. In the *Pramāṇa-Samuccaya*[2] he defines *trairūpya* as "*anumeye' tha tat-tulye sadbhāvo nāstitā'sati*". This means "The presence of the middle term (*hetu*) is the subject of the inference; its presence again in what is like the subject of the

1. (i) *Vaiśeṣika-bhāṣya* (*Padārthadharmasaṁgraha*), Benares, p. 200.
   (ii) yad anumeyena saṁbaddhaṁ prasiddaṁ ca tadanvite tadabhāve ca nāsty eva, tal liṅgam anumāpakam.
2. Randle, *Fragment from Dignāga*, p. 22.

inference ; and its absence in what is not like the subject."[1] It was later modified in the *Nyāya-bindu* by Dharmakīrti as follows :

"*anumeya sattvam eva,*
sapakṣa eva sattvam,
asapakṣe cā-sattvam eva".

It means "existence only (never non-existence) in the subject or things denoted by the minor term ; existence in things which resemble the subject only ; (never in things which do not resemble the subject i.e. in *vipakṣas*) ; only non-existence (never existence) in things which do not resemble the subject. Here I would like to refer to Stcherbatsky's interpretation regarding this conception.[2] He interprets Dignāga's *Trairūpya* as : (1) Its presence in the subject of inference, (2) Its presence in similar instances ; (3) Its absence in dissimilar instance.

Dharmakīrti's version was rendered in three stages :

I

1a. The presence of the *hetu* in the subject ; its presence, 'just', i.e. never absence.

2a. Its presence in similar instances, 'just' in similar, i.e. never in dissimilars ; but not in the totality of the similars.

3a. Its absence from dissimilar instances ; its absence 'just', i.e. never presence, absence from the totality of the dissimilar instances.

II

1b. The necessary presence of the *hetu* in the subject totality.

2b. Its necessary presence in similar only, although not in their totality.

3b. Its necessary absence from dissimilars in their totality.

III

1c. In subject wholly ;
2c. In similar only ;
3c. In dissimilar never.

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1. NV. I. 1.5, p. 58.
2. Stcherbatsky, *Buddhist Logic*, Vol. I, pp. 224-25.

These were debated during the time of Vācaspati Miśra. Certain Buddhist logicians defended the doctrine of the *Trairupya* because it was initiated by their producer—Dignāga.

The following debate is recorded in the *Nyāyavārtika-tātparyaṭikā* :[1]

Vācaspati Miśra points out that the clause 'the *hetu* exists in the subject only' involves two conditions (1) the *hetu* does not fail to exist in the subject. (2) the *hetu* does not exist in what is not the subject. Similarly, the clause 'the *hetu* exists in similar instances only' also involves two conditions, viz. (1) the *hetu* does not fail to exist in similar instances; and (2) the *hetu* does not exist in what are not similar instances. The conjunction of these two clauses is self-contradicting.

The proponent points out that by joint restrictions he did not mean it in the sense of mutual exclusion of the subject and similar instances (i.e. 'there is X, which is f', and 'there is X, which is not-f' are mutually exclusive). What is meant is the refutation of the negative meaning (*apoha*)—both terms alike signify exclusion of dissimilar instances. This implies that the subject and similar instances are identical simply because they both exclude the same negative class. If this was the intention of the Buddhist, then the following syllogism would be a valid one : "A cow is a tree, because it is not an elephant". Although a cow and a tree are alike in respect of excluding an elephant, it is absurd to say that a cow and a tree are identical.

The whole discussion is based on misinterpretation. In fact Dignāga never says that the subject and similar instances are identical. The concept of *Trairūpya* is totally misunderstood by both the proponent and the opponent.

Before giving the correct interpretation here, I would like to quote Uddyotakara's criticism. Although Uddyotakara criticized all the three clauses explaining the concept of *Trairūpya*, the real controversy relates to the second clause, i.e. *sapakṣa* (similar instances). When the Buddhists stated the final possible interpretation that the *hetu* must at least be found in some, not necessarily

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1. i. NVT. 59.2. p. 128.
   ii. IL. pp. 257-58.

in all, similar instances (in other words the phrase 'only present' means 'barely present', which was most likely the true interpretation.) Uddyotakara at once criticised it by saying : "The formula does not succeed in saying this—not even with the help of the restricted word 'only'."[1] Uddyotakara's intention can very well be understood if we look at all the interpretations given by him. First, his interpretation of the first clause. The *hetu* is present in the subject only ;[2] the *hetu* is only present in the subject', which gives 'there is atleast one X which is both f and g, which excludes the negative proposition, i.e. 'it is false that there is atleast one X which is both f and g or 'no Fx is gx'. This interpretation can suit the second clause beautifully i.e. there is atleast one X which is both g and h. He interprets the second clause as (1) the *hetu* is present in similar instances only, (2) the *hetu* is present in all similar instances.

Secondly, take his interpretation of the third clause, i.e. (1) only the *hetu* is absent in the dissimilar instances. (2) the *hetu* is absent in the dissimilar instances only. His interpretation of the 3 (i.e. only the *hetu* is absent in the dissimilar instances) can be written in two ways ; either $(x)\ (\sim hx \supset \sim gx)$ or $(x)\ (gx \supset hx)$. The former can remain as the third clause and becomes no longer redundant, because the second clause means something different. The later can suit the first clause.

We find real controversy with regard to the second clause i.e. *hetu* must be present in *sapakṣa* only. Dharmottara[3] defines the second clause as :

1. *'Only pres ence'*

= Only presence of the quality of the *hetu* in similar instances but not otherwise.

= Only presence of the quality of the *hetu* in similar instances but not its absence ;

1. i. NV. I. 1.5, p. 58.
   ii. IL. p. 225.
2. i. NV. I. 1.5, p. 58.
   ii. IL. pp. 250-51.
3. Chi, RSY *Buddhist Formal Logic.*

= Only presence of the quality of the *hetu* in similar instances but not absence of the quality of the *hetu* in similar instances.

In short he affirmed gx.hx and excluded∼gx.hx. It will exclude the function of formal implication and as a result the major premis of a syllogism will be confined to 'formal equivalence' only. That is, a major premis should be of the form 'for all x', and x is equival to g and h and should not be 'for all x if gx then hx'. This interpretation is untenable.

2. '*Only similar*'

= Only the similar instances possess the quality of the *hetu*, and no others possess it ;

= Only the similar instances possess the quality of the *hetu* and dissimilar instances do not possess the quality of the *hetu.*

In short, he affirmed gx.hx and excluded gx.∼hx, which is quite tenable.

The concept of *Trairūpya* is misinterpreted since the time of Dharmakīrti down to Sctcherbasky. What was the reason behind this ? There seems to be three main reasons responsible for the misinterpretation of *Trairūpya* :

(1) *Ambiguity in terminology*: Very frequently many terms may represent precisely one and the same thing according to the preference of different authors. For instance, the term 'similar instances' has almost been given a dozen different versions. Also quite often one single term may represent a multiplicity of meanings, even when it is used by one and the same author in a single sentence. The word '*anumeya*' is an example. *Anumeya* has the usual double meaning: neither S nor P, but SP."[1] "*Anumeya* is here used in two different senses—first as P and then as S—in one and the same clause. Similar cases of the ambiguous use of *sādhya* in a single clause could be quoted from Vātsyāyana".[2] We may take *sādhya* or *anumeya* as an ambiguous abbreviation for either *sādhyadharma* or *sādhyadharmin* ; in which

1. Randle 2, p. 168, N-2.
2. Randle 2, p. 170, N-1.

case the ambiguity of the term is an accident of language, or we may suppose that the ambiguity was an ambiguity of thought natural to the earliest formulation of inference, and that then the distinction between *sādhyadharma* and the *sādhyadharmin* was drawn. The later supposition seems to be true.[1]

However, there is a passage in the *Nyāyamukha*[2] saying: 'Somebody may object: since the word '*anumeya*' is defined as 'that which is to be proved', why is it that in the above *kārikā* you have used it to mean the subject of a proposition only? The reason behind that was 'because the name of the whole is implied by that of a part' which is implied by 'a part of the garment is burning'. There are cases in which the word '*anumeya*' is used to mean the predicate only'.

(2) The Yogācāra school, after Dharmakīrti and Dharmapāla, was in the stage of decline, and became dogmatic. Dignāga's freshness had all gone.

In fact, all the theories concerning the *hetucakra*, the *Trairūpya*, the use of exemplification as one necessary part of the syllogism, the treatment of null-classes and the list of fallacies, are closely inter-related like the links of a chain, and none of them can be dispensed with. Dignāga's followers at a later period failed to realize that point and his theories were treated as disconnect and isolated thought fragments.

(3) The third cause is the deliberate misinterpretation by Dignāga's opponents, particularly by Uddyotakara. Another point is that all the materials on the debates are based on the *Nyāyavārttika* and the *Nyāyavārttikatātparyaṭīkā*. Therefore the accuracy of his record as a historical account is doubtful.

Now let us try to reconstruct the concept of *Trairūpya*. The first clause in the explanation of it is less obscure, although the term *anumeya* or *pakṣa* has been used by early logicians in ambiguous ways—sometime it means the minor term, sometimes the major term and sometimes the probandum. It is most obvious that this word here should refer to the minor term and not

1. Randle 2, p. 185, N-1.
2. *Nyāyamukha*, Taisho 1625, p. 1b.

anything else. The word 'Only' in the first clause should be put in a position such that "Only the *hetu* (i.e. gx, and not$\sim$gx) is present in the *pakṣa* (subject)" (x) (fx$\supset$gx). It should be—"The *hetu* is present in the subject only", i.e. (x) (gx$\supset$fx), not that "the *hetu* is only (barely) present in the subject" (Ex) (fx$\cdot$ gx), as wrongly interpreted by Uddyotakara.

According to the Chinese rendering, the *Trairūpya* may be explained as follows : "The pervasive presence of the *hetu* in the *pakṣa.* The necessary presence of the *hetu* in some similar instances (*sapakṣa*) ; The pervasive absence of the *hetu* from dissimilar instances (*vipakṣa*)." The phrase 'necessary presence' actually means 'assured presence' 'not failing to be present' or 'bare presence' includes two possible cases, viz., the pervasive presence and partial presence (*Sapakṣavyāpaka* and *Sapakṣaika-deśavṛtti*).

Let us define "Pervasive presence" of b in a as "b is present in any a", or "every a is b", in contrast to "partial presence" (*Sapakṣaikadeśavṛtti*) of b in a "which means "some a, but not every a, is b", or "at least one a, at most every a, is b". The "necessary presence of b in a" includes both the types of presence, i.e. *vyāpaka* and *ekdeśavṛtti* and is defined as "b is present in atleast one, a, at most in every a", or "at least one a, at most every a is b." The "pervasive absence" (*vipakṣa vyāpaka*) of b from a is defined by the formula "b is absent from every a" or "every a is non—b", or "no a is b" in contrast to "partial absence", which means "b is absent from some a" or "some a, but not every a, is non-b."

The "pervasive presence or absence" corresponds to universal proposition. But particular proposition includes both "necessary" and "partial" presence.

From the above consideration, the first clause of the *Trairūpya* may be interpreted as follows :

(1) The property g is present in everything which possesses the property f,

(2) Everything which possesses the property f possesses the property g,

(3) For every x, 'x is a f' implies 'x is a g'.

On the basis of the first clause now, let us see the second clause, i.e. necessary presence in *sapakṣa*. The definition will be as follows : "There is atleast one occasion in which the property g is present in a thing which possesses the property h, apart from the thing which possesses the property f, which seems to be proved". Apart from the thing which possesses the property f, at least one thing which possesses the property h possesses the property g." Therefore, for some x which is not a f, x is both h and g. Similarly the third clause would be interpreted as : There is no occasion in which the property g is present in things which possess the property of non-h. Again, nothing which possesses the property of non-h possesses the property g. And no x, x is both a non-h and a g. Therefore for every x, 'x is non-h' implies 'x is non-g'.

On the basis of the above consideration of the *Trairūpya* we can understand very well Dharmottara's interpretation of the word 'only' in the second clause :

'*Only presence*'

= "Only presence of the property of the *hetu* in similar instances but not otherwise",

= "Only presence of the property of the *hetu* in similar instances but not utter absence of it in all similar instances",

= "The presence of the property of the *hetu* in at least one similar instance".

In other words, we can say that "for some x, x is both g and h" is affirmed and "for all x, if x is g, then x is h" is negated ; or "for some x, x is both g and h" is affirmed, and "for some x is not x, and x is both g and h" is negated. This explanation can manage to avoid the inconsistency or redundancy.

Finally, let us link the *Trairūpya* and the *hetucakra*, by pointing out that these two concepts are inter-related. In fact in the *hetucakra* Dignāga shows the possible combination of the *hetu* with *sapakṣa* and *asapakṣa*. In order to distinguish between *sad-hetu* and *asad-hetu* he introduced the concept of *Trairūpya*. This conception is nothing but a combination of three conditions for a *hetu*. Whenever any *hetu* possesses these three conditions

(as I already mentioned) then that *hetu* becomes *sad-hetu*. Consider the traditional example : 'Sound is impermanent, because it is produced like pot'. In this case we have to note two important things viz. being produced and being impermanent.

Middle 'Produced'	*Major* 'Impermanent'	*Example*	*Terminology used in Hetu-cakra*	*Terminology used in Trairūpya*
Yes	Yes	pot	—	—
No	Yes	—	*Sapakṣavyāpaka*[1]	—
Yes	No	—	—	*Sapakṣa eva ca Sattvam*[2]
No	No	Space	*Vipakṣāvṛtti*[3]	

Consider another example 'Sound is impermanent because it is produced by effort'. So we have

Produced by Effort	*Impermanent*	*Example*		
Yes	Yes	pot	*Sapakṣaikadeśavṛtti*[4]	—
No	Yes	Lightning	—	*Asapakṣe ca Sattvameva*[5]
Yes	No	—		
No	No	Space	*Vipakṣāvṛtti*[6]	

We have seen up to now that there is no major controversy regarding *hetu's trairūpya*. Of course, we find some controversy in respect of the second clause of Dignāga's *trairūpya* but everything is due to misinterpretation of the conception by both the proponent and the opponent. But it can be managed. Nyāya-vaiśeṣika also will not find easy to reject *trairūpya* in its totality. As I already mentioned that Gautama while hinting in his

1. Pervasive presence in similar instances.
2. absence in dissimilar instances.
3. partial presence in ṣimilar instances.
4. absence in dissimilar instances.
5. unfailing presence in similar instances.
6. necessary absence in dissimilar instances.

Nyāya-sūtra[1] that a *sad-hetu* is that which proves the probandum or the characteristic sought to be proved in the subject, has indicated that the *hetu* is a mark which can 'prove the existence of the characteristic sought to be proved in a subject' (*sādhya-sādhana*). But when does a *liṅga* or *hetu* prove the *sādhya* ? By enumerating the five-fold *hetvābhāsa*, Gautama indicates that to be a real *hetu* a mark must possess five characteristics (*pañca-rūpya*), in default of any of which it becomes a *hetvābhāsa*.

Now, let us see what are these five characteristics of a *hetu* according to Nyāya. These five characteristics, as explained by later Naiyāyikas, are :

N-1. 'Presence in the *pakṣa*' (*pakṣa-sattva*) ;

N-2. 'Presence in an indisputable locus of the sādhya' (*sapakṣa-sattva*) ;

N-3. 'Absence in an indisputable locus of the absence of the *sādhya*' (*Vipakṣa-asattva*) ;

N-4. 'Having no counter argument' (*a-satpratipakṣitatva*) ; and

N-5. 'Being uncontradicted' (*a-bādhitatva*).

By '*pakṣa*' is meant something where the presence of the *sādhya* is yet to be proved. Presence in such a subject is *pakṣa-sattva*. By '*sapakṣa*' is meant something where the presence of the *sādhya* is already proved. Presence in such an indisputable locus is *sapakṣa-sattva*. By '*vipakṣa*' is meant something where the absence of the *sādhya* is already proved. Absence in such an indisputable locus is *vipakṣa-asattva*. These three conditions are also accepted in Buddhist logic. Thus, consider this, in the inference of fire from smoke in the hill. The hill is the *pakṣa*, the kitchen, *sapakṣa* and water, *vipakṣa*. The *hetu*, viz. smoke, being present in the hill as well as in the kitchen and being absent in water, has the first three characteristics of a *sad-hetu*, viz. *paksa-sattva*, *sapakṣa-sattva* and *vipakṣa-asattva*.

Further, as there is no counter *hetu* equally powerful and as the absence of fire in the hill is not already disproved by any stronger ground this *hetu*, viz. smoke. has also the characteristic

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1. NS. I. 1.34.

of a *satpratipakṣitatva*, and *a-bādhitatva* respectively. Thus, in short, smoke becomes a real *hetu* for the inference of fire in the hill, as it possesses all the five required characteristics of a *hetu.*

VI

A RESUME

As already pointed out Dignāga—Dharmottara accept only three characteristics for the *sad-hetu* Here, I would like to mention that Dignāga holds that all the *hetu*-s are *pakṣa-dharma.* This means that all the *hetus* and *hetvābhāsas* are the qualities of the *pakṣas* (*pakṣa-dharma*) in an inference. In order to distinguish between *hetu* and *hetvābhāsa* Dignāga points out that a true *hetu* is invariably concomitant with its *sādhya* if it possesses only the three characteristics in lieu of the five of Nyāya. If the *hetu* is thus characterized then its possibility of being associated with a *sādhya* which is contradicted by a piece of knowledge is ruled out since invariable concomitance and contradiction are incompatible. So the Buddhists would take the last two conditions of Nyāya as redundant because they think that they are implied in the first three.

Consider this example, "fire is not hot because it is a product", the reason, being a product, has the three conditions ; over and above them it has another feature, viz., it is concomitant of the *sādhya* ; 'not-hot' which is contradicted by touch perception. But if this reason is carefully examined then it is clear that it does not possess the three conditions of a sound reason. A sound reason must be the *pakṣa-dharma* in an inference. But the above reason does not belong to it. In this *pakṣa* the presence of a *hetu* is doubtful. It may or may not be the *pakṣa-dharma.* But its absence as the *pakṣa-dharma* in the inference should never be determined by another proof. If its absence is determined, then it ceases to be a *pakṣa-dharma.* A reason which is present in such a deefective *pakṣa-dharma* of inference should not be taken as belonging to the *pakṣa-dharma.* Moreover, the positive relation of invariable concomitance (*Vyāpti*) holding between *hetu* and *sādhya* has not been discovered. Had it been so, its discrepancy would have been detected then and there. A generalisation based upon the observation of positive instances refers to all cases. Thus the *sādhya* (the major premise) is "Whatever is a product is

not-hot". When we verify it then we find that fire is a product but is hot. Thus, how can the major premise be arrived at ?

As this reason is not invariable concomitant of the major term in question, the conclusion drawn from the reason in question looks like approaching an impotent person with a prayer for love.

The negative instances should also be taken into consideration so that we may arrive at the true induction. But the foundation of induction is the method of agreement. The method of difference is merely a corrective process which clears the way to induction. Therefore, the above reason does not fulfil the conditions of a true reason. On the contrary, it becomes a faulty reason. Hence, the alleged condition of a true reason that it should not be invariable concomitant of such a major term as is contradicted by another proof is logically untenable. How do we know that the alleged condition is an essential one ? The mere non-perception of contradiction does not lead to the conclusion that there is non-contradiction here, since persons who are not omniscient cannot know what is truly non-contradicted. If the condition of a true reason be non-contradiction, all reasons cease to be true ones since according to the Buddhist a reason, devoid of one of the three essential conditions, ceases to be sound. In short, non-contradiction (i e. *abādhitatva*) should not be held to be one of the conditions of a true reason.

Furthermore, the Buddhists hold that nothing really possesses two mutually contrary characteristic features. It is true that a thing is not endowed with two contrary characters. But it is in the nature of inference that an object should be exclusively selected as the subject of inference. If we do not do so, then it will not be possible to find out either a similar example or a contrary one since they would be independent of the subject of inference, for their very existence as possessing unquestionable authority would decide the fate of the *pakṣa-dharma*, i.e., they would act as the unquestionable standard of verification. If the character of a contrary example is attributed to the actual *pakṣadharma* of inference and the syllogistic process is vitiated thereby then the sound process of deduction might also be invalidated by such a contrivance.

Now, the Buddhist may contend that in case of a sound inference the *pakṣadharma* viz., a hill, is not definitely known as containing the negation of major term. If this be so, then would the fire in question be definitely known as containing fire before the actual inference takes place? If the Buddhists gave the answer in the affirmative, as Nyāya points out, then why is it that the fire is inferred at all?

Now the Buddhists point out that there is neither the positive judgement that the hill is fiery nor there is the negative judgement that the hill is not fiery but there is the disjunctive judgement that the hill is either fiery or non-fiery. Hence the hill which is the *pakṣadharma* of the above disjunctive judgement is a case of doubtful contrary example. In the Buddhist terminology a reason which belongs to a doubtful contrary example should be faulty one like the one belonging to a contrary example. Hence the Buddhist rejects the Nyāya contention of having no counter example (*a-satpratipakṣitatva*).

To sum up we can say that according to the Buddhist *sad-hetu* is that which possesses all the three characteristics viz, pervasive presence of the *hetu* in the *pakṣa*; the necessary presence of the *hetu* in some similar instances (*sapakṣa*) and the pervasive absence of the *hetu* from dissimilar instances (*vipakṣa*). Again, along with three characteristics of a *hetu* the Buddhists propose two rules for verifying whether a *hetu* is universally concomitant or not. These are the rules of existential tie and causation. On the other hand, Nyāya-Vaiśeṣika add two more characteristics for distinguishing a *sad* from an *a-sad hetu* i.e. *asatpratipakṣitatva* and *abādhitatva*. Along with these five characteristics they add two rules like the Buddhists for verifying whether a *hetu* is universally concomitant or not. These are the rules of co-presence (*sāhacarya*) and succession (*krama*). In the end I would like to mention that while the Buddhists stressed on *avinābhāva sambandha*, the Nyāya stressed *avyabhicaritatva sambandha*. These are the basic tenets for both the Buddhists and Nyāya-vaiśeṣika respectively concerning the test of validity or invalidity of the *hetu*.

According to the Buddhists if we violate the first, second and third clause of the *Trairūpya*, we have the following fallacies, viz.,

unproved (*asiddha*); uncertain (*anaikāntika*) and contradictory (*viruddha*) respectively. On the other hand, according to Nyāya-vaiśeṣika, if we violate, the first, second, third, fourth and fifth clauses we have the following fallacies, viz., unproved (*sādhyasama*), contradictory (*viruddha*), irregular (*savyabhicāra*), counter-acted (*prakaraṇasama*), and mistimed (*kālātīta*), respectively. I shall discuss these fallacies in the next chapter.

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CHAPTER II

HETVĀBHĀSAS : A HISTORICAL SURVEY

In the previous chapter I discussed the criteria for a *sad-hetu* which are essential for making it a universal concomitant. I propose, in this chapter, to discuss *first* actually what do we mean by *ābhāsa* then thereafter compare Gautama's and Dharmakīrti's lists of fallacies. Finally, I shall discuss various types of *hetvābhāsas*. Here I shall confine my discussion to Gautama, Uddyotakara and Gaṅgeśa on the one hand, and Dignāga and Dharmakīrti, on the other.

Generally speaking every Indian and Western logician first sets up a certain set of rules making our inference valid, and then points out that if any inference or argument fulfils all the conditions—which are mentioned in the set of rules, then it becomes valid. If, on the other hand, any inference or argument is incapable of fulfilling or seems to fulfil all the conditions—which it actually does not, then, that inference or that argument would become fallacious. The *hetvābhāsas* or apparently valid reasons are very frequently used in debate between two parties. When we want to know something then we have to know what it is and what it is not i.e. *sat* and *asat*. We can say that the word '*asat*' means something which 'seems to be fulfilling all the conditions of a *sad hetu* but actually it is not'. This is actually the meaning of *ābhāsa* and more often '*asad hetu*' and '*hetvābhāsa*' are used in one and same sense. From the above consideration we can say that if we find it difficult to list exhaustively all the conditions of the *hetu* necessary and sufficient to insure validity of the inference in question, the alternative is to list and classify as many as one can of apparent *hetus* which are not real *hetus*, i.e. which do not produce a valid inference.

I
THE CONCEPT OF HETVĀBHĀSA

In Indian logic the fallacies of inference are all material fallacies. So far as the logical forms of inference are concerned,

there can be no fallacy, since they are the same for all valid inferences. An inference, therefore, becomes fallacious by reason of its material conditions. The Nyāya account of the fallacies of inference is accordingly limited to the fallacies concerning the constituents of inference, and these have been finally reduced to those of the *hetu*. For the purpose of proof an inference is shown to consist of five members, viz. *pratijñā*, *hetu*, *udāharaṇa*, *upanaya* and *nigamana*. As such, the validity of an inference depends on the validity of the *pratijñā* and other constituent parts of it So we may speak of fallacies of the *pratijñā*, etc., as coming under the fallacy of inference (*nyāyābhāsa*). That is, all such inferences as are opposed to perception and scriptural testimoney.[1] But it must be admitted that the validity of an inference depends ultimately on the validity of the *hetu*. So also the members of a syllogism turn out to be right or wrong according as they elaborate a right (*sad*) or wrong (*a-sad*) *hetu*. Therefore the fallacies of inference ultimately arise out of the *hetvābhāsa*. So the Naiyāyikas bring the fallacies of inference generally under the *hetvābhāsa* and think that a separate treatment to the inferential fallacies of propositum, example, etc. (*pratijñābhāsa*, *dṛṣṭāntābhāsa*) is unnecessary and superfluous.

Now let us consider first what are the causes behind the commitment of fallacies ? The reason behind this is that "it is a time when reason (*tarka*) staggers through the streets with its head to the ground and its legs in the air. Gradually we have got into a state when it's no longer possible to tell the true from the false, the dark from the light, the sun from the moon".[2] It may be that we are no more mad than the less agonizingly *self-conscious*.[3] Another cause for committing a fallacy is : Reason has its limits when we must deal with those who will not listen to reason.

Intellectualist fallacy : It is characterized as an unreasoning belief in the efficiency of reason. The intellectualist fallacy involves responding to the meaning of what is being said rather than to the point. But there is no point to illogical thinking, if

1. NBh. 1.1.1.
2. Abraham Kaplan, *The Pursuit of Wisdom*, p. 89.
3. Ibid.

taking thought is what is called for. Neither there is a certain openness which derives from intellectual humility, the fallibilism which is ever aware that when my views differ from another's I just might be wrong. Nor is it necessarily a kind of anxious insecurity, but simply recognition that all perspectives are limited, that every view-point is partial and, at best, is correct only as far as it goes (*saptabhaṅgi*).

The second form of intellectualist fallacy runs as follows : "This is now my way ; what is yours ? As for the way, it does not exist." Differences among persons, groups, cultures are real and significant. No one can live by a professed philosophy which does not reflect these differences. A philosophy is not a garment which all men can wear ; even when it is made to measure, it must sooner or later bind or hang loose. A multiplicity of view-points is not a necessary evil derived from human error and ignorance. It is due to the limitation of human mind.

Therefore to understand human behaviour we must distinguish between its causes and its reasons. The causes of an action are the conditions and forces which bring it about ; the reasons for the action are the considerations invoked to justify it. Then what is wrong when we use it rationally ? The one possibility is that it pretends to a reasonableness which is unassailable, but which is in fact irrelevant, like the accuracy and irrelevance of the intellectualist arithmetics. The mistake is not in the argument but in its implication. The insistence that argument is misapplied does not imply that the argument is mistaken, and certainly not that some mysterious logic of the emotions would provide a better argument. Thus there is no point of determining whether an argument is fallacious if it is irrelevant or if the question of validity is irrelevant. So we can say that a fallacy is a mistaken argument. Thus we can say that like an optical illusion, which is real when it is recognized for what it is, the fallacy lies in bad judgement rather than in what is being judged. So we can say that fallacy means "deception".

In the *Nyāya Sūtra*[1], the section on fallacies starts with a definition of three kinds of 'controversy', or discussion viz.

1. NS. 1.2.1-3.

(i) discussion, which consists in putting forward by two persons of a conception and counter conception, in which there is supporting and condemning by means of proof and reasonings—carried on in full accordance with the method of reasoning through 'five members' ; (2) disputation, which is discussion 'in which there is supporting and condemning by means of casuistry, futile rejoinders and clinchers' ; and (3) 'wrangling, which is disputation that is inconclusive'. This implies that the fallacies we have so far been discussing are such as occur primarily in the first of these (i.e. the method of reasoning through five members) three kinds of controversy and, though to be condemned, are of a lesser order of evil than what follows. Disputation and wrangling may be employed to keep up our zeal for truth, and are of use against people who will themselves not argue properly.

Before considering what Gautama and Vātsyāyana say about fallacies it is necessary to sketch their theory of inference. This betrays a '*dialectical*' origin almost as strong as Aristotle's 'Topic'. A single pattern of inference is given, without moods or figures. An inference has five members. Illustrated by the stock example of later writers, they are :

(1) *Pratijñā* (Thesis) : 'The hill is fiery'

(2) *Hetu* (Reason) : 'Because it has smoke'.

(3) *Udāharaṇa* (Example) : 'Whatever is smoky is fiery, like a kitchen, unlike a lake'.

(4) *Upanaya* (Application) : 'And this hill is smoky'.

(5) *Nigamana* (Conclusion) : 'Therefore it is fiery'.

In place of these five Dignāga accepts only two, the general rule, including the example and the application, including the conclusion. Indeed the main point in every syllogism, just as in every inference, is the fact of the necessary interrelation between two terms, as it is expressed in the major premise. The second point consists in the application of the general rule to a particular case. This is the real aim of inference, i.e. the cognition of an object on the basis of the knowledge of its *hetu*. When these two steps are made, the aim of the inference is attained; other members are superfluous. It thus consists of a general rule and its applica-

tion to an individual case. Therefore, we can say, "the essential structure of each valid deduction is (1) a universal ground-proposition, affirmative or negative, and (2) an applying proposition which must be affirmative. Hence Dignāga rejects the five steps for the process of correct inference, though he does accept five terms necessary for inference.

The five terms are these : (i) the subject of the inference, that whose property is to be proved. In the above argument "this hill", is called in Sanskrit the *pakṣa* which we shall abbreviate as p. (ii) The argument or reason is that the hill is fiery ' because it has smoke", i.e., because it is known to have another property which is related in an appropriate way to the *sādhya*. This property is called *hetu* or h. (iii) The property of *pakṣa* which is to be proved because of its relation to *hetu* is called '*sādhya*' or s. Fire in the present example is s. In the third member of the argument two kinds of example are offered. One is positive, one negative. (iv) The positive example is called *sapakṣa*, or sp, while the (v) negative one is *vipakṣa*, vp. In the argument above, 'kitchen' is the sp, while 'lake' is the vp.

Now we can ask why five members and not fewer ? In discussions which actually appear in the course of philosophical polemics the characteristic form of an argument is briefer. It tends to be stated something as follows: "That hill has fire, because it has smoke, like a kitchen and unlike lake." This short-form argument sets out all the five terms in their appropriate places. Why is it not sufficient, and why should we not reject the additional material in the five membered Nyāya argument as redundant or dispensable ? Mīmāṁsakas, Advaitins, and Buddhists all consider the Nyāya argument-form unnecessarily prolix.

Vātsyāyana gave the justification. He thought that in full-scale argument all four of the valid instruments of knowledge come into play, and that each of the first four members of the argument form represents an instrument. The conclusion stating the judgment is proved by all four instruments in tandem. This implies that he identifies *pratijñā* with verbal testimony ; the reason or *hetu* as being inference proper ; the example indicating the

perceptual material ; and the application representing the use of comparison.[1]

From the above consideration we can say that in discussion these five constituents of the inferencial statement or *avayavas* are very useful, and with the help of these *avayavas* anyone can produce contrary argument, i.e. *pakṣa* and *pratipakṣa*, in favour of his own argument—which leads to the attainment of victory against his opponent. For example, *ātman* exists and *ātman* does not exist. But when the contrary properties are said to subsist in different locus, they are not called *pakṣa* and *pratipakṣa*, e.g. *ātman* is eternal and *buddhi* is non-eternal. Therefore the distinctive feature is that to support is to establish and to refute is to deny or reject. Thus support and refutation are both connected in a systematic manner until one of the two—the view (*pakṣa*) and the counter-view (*pratipakṣa*)—is proved and the other disproved. What is proved is then accepted and what is disproved is rejected. In short, we can say that the qualification regarding the use of the five members is meant to indicate that the use of the irrelevancy, deficiency and redundancy, are permitted in discussion.

Disputations are also reflected in the *avayavas*. The justification for this is that the disputations employed by the two parties to a discussion should be inter-related. There can be no discussion if both parties go on producing arguments which are meant only to support their own position, without giving much attention to the position of the other. Again, the definition of rejoinder may create the impression that whenever supporting and refuting are done only by means of casuistry, futile rejoinders and clinchers, this is always rejoinder ; whereas if these are done on the basis of *pramāṇa* and disputation, these always constitute controversy. In fact, deficiencies employed in rejoinder can be used in discussion.

Now take casuistry which is of three kinds: The *First* is no more and no less than Equivocation. Consider this: the word *nava* means alternatively 'new' and 'nine', and when someone argues 'that boy has a *nava* blanket' the casuist says 'No, not nine blankets, only one'. The above argument shows that the casuist puts a wrong

1. Randle, pp. 164-65.

denotation on a word and this is to be regarded as equivocation also. In fact wrong denotation of a word always depends on circumstances. The *Second* type of casuistry is generalizing. In this case some one can take speaker's words in a more general way without considering the intention of the speaker. For instance, someone who says learning and character are quite natural to a *Brāhmaṇa*, does not necessarily intend 'delinquent' *Brāhmaṇas*, i.e. those who have not gone through all the rites and ceremonies, to be included and it will be casuistical to take him as doing so. The *third* is 'figurative' which consists in shifting the primary meaning of an opponent's words.

Gautama[1] mentioned twenty-four futile rejoinders. These types of objections are raised on the basis of similarity and dissimilarity. The translation seems a little exotic, since the Sanskrit word is just *jāti*—is a list of ways in which a piece of syllogistic reasoning may be 'equalized' : i.e., of ways in which an opponent may bring arguments that balance or neutralize the original reasoning without challenging it on its own ground, in the way the author would consider proper.

These types of objections should be met in the light of following principles : (a) If a specific *hetu* is demanded of the opponent, the same will have to be required of the original proponent. The proponent may contend that both views (i.e. *pakṣa* and *pratipakṣa*) stand on the same footing. (b) Defect attaches to the opposition of the opposition just as it attaches to the opposition. If the proponent says that the *hetu* in the opposition is inconclusive, the opponent may retort that the opposition of the proponent to his opposition contains the same fault. (c) If one admits the defect of one's opposition as the consequence of one's statement - the same defect attaches to the opposition of the opposition; it is called "admission of an opinion" (*matānujñā*). (d) "Admission of an opinion" also occurs when the proponent, instead of stating *hetus* to rescue his view from the defect with which it has been charged, proceeds to admit the defect as the consequence of the following : 'the same defect belongs to his opponent's view as well'.[2]

1. NS. V.1.1.
2. NS. 39-43.

On the other hand, Gautama[1] mentioned twenty-two 'clinchers'—the word is *nigrahasthāna*, which has also sometimes been translated 'respondent's failures'. These are the ways in which the proponent of a thesis can spoil his case with dialectical shortcomings.

The two lists, i.e. twenty-four futile rejoinders and twenty-two clinchers, can be seen as complementary if we imagine them as a manual of debating tactics, and as setting out possible dialectical faults of both the opponent and the proponent, respectively, in a debate or discussion The Buddhists ignore the first list i.e. twenty-four futile rejoinder, and mention the second i.e. clinchers.

Wrangling or Cavil : Rejoinder becomes cavil when there is no attempt to establish the counter-view. A person who resorts to cavil does not seek to establish the view he puts forward but only criticizes the view of the other person. But on this ground it would not be correct to say that in rejoinder there is no counter-view (*pratipakṣa*). The statement that the person makes in attacking his opponent's view really constitutes his own view. It is stated only in the form of an attack on his opponent without any attempt to prove his view.[2]

The three-fold controversy mentioned by Gautama, Uddyotakara points out, is concerned, in the field of investigation into the nature of things, with investigation which is carried on by means of controversy among parties. Here we have to note three points regarding the purpose of investigation. These are : (1) to know what one did not know, (2) to remove doubts ; and (3) to obtain confirmation of what one knows[3] On the basis of this Uddyotakara mentions the following definition of debate and this definition is attributed to the Buddhist philosopher Vasubandhu[4] in his *Vādavidhi*. The definition is as follows :

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1. NS. I.2.20. and NS. N.2.1.
2. NBh. 1.2.3.
3. NV. 1.1.1.
4. Svaparapakṣasiddhyasiddhyārthaṁ vacanaṁ vādaḥ.

"Discussion is a discourse for the purpose of proving and disproving one's own and another's views respectively."[1]

Of the terms *'sva'* and *'para'* (i.e. one's own and another's), says the Buddhist, 'sva' means possessing—i.e. 'making one's own—so that it would be *sva* for the man who makes it his own. When a man has the idea of 'mine' with regard to something i.e. his *sva*, on the one hand ; and again when he has no grounds for such an idea with regard to a thing i.e. that thing is 'para' for him, on the other hand. Uddyotakara points out that this explanation is not satisfactory, because this explanation is too common. The Buddhist provides another explanation in which he points out that if *'sva'* means what is to be proved and *'para'* means what is to be refuted, then, this would imply that one has to prove one's own view and criticize another's. In essence this view is very close to Gautama's definition of discussion in which he mentioned *pakṣa* and *pratipakṣa*.

Gautama points out that in the bebate or discussion, one has to pass through all the five *avayavas* (members). When one passes through all the process of discussion in course of which he has to establish his own view (this is what Buddhist meant by the word 'sva' in the second definition, i.e. what is to be established) it is presumed that in discussion other's thesis or view is rejected (this is what Buddhist meant by the word *'para'* i.e. what is to be rejected).

II

DEVELOPMENT OF THE IDEA OF HETVĀBHĀSA

In this section we shall discuss the general definitions of *hetvābhāsa* as far as possible in the historical order.

A

Nyāya-Vaiśeṣika

To begin with, Kaṇāda did not give any general definition of *hetvābhāsa*. But he gave some hints while proposing a classification of *hetvābhāsa*.[2] He arranged them under three heads viz.

1. NV. 1.1.1.
2. VS. 3.1.10.

(1) *a-prasiddha* (not famous), (2) *sandhigdha* (uncertain) and (3) *asat* (unreal).

(1) *Aprasiddha* : This characteristic of *hetvābhāsa* shows that inference is always cognized or inferred on the basis of universally known object. This implies that inference is not formal. Again, we can say that inference can be possible only through a theory of knowledge i.e. which is universally held. Thus, if we use a *hetu* which is not well-known or not universally known, then that *hetu* should be considered as *hetvābhāsa*.

(2) *Sandhigdha* (uncertain)—If the presence of *hetu* is uncertain in *pakṣa*, then it is called uncertain or *sandhigdha*. In other words we can say that for all x, if x is h, and if the presence of h is doubtful in p, then xh is known as H (here H denotes *hetvābhāsa*).

(3) *asat* (unreal)—If we try to use non-existent *hetu*, then we have H. Suppose at a time t_1 X is present but at t_2 X is found to be absent. If we used h on the basis of t_1 for a situation at t_2 then that h would become H.

The achievement of Kaṇāda in the history of Indian philosophy is that following him *sandigdha* and *asat* have been recognised by the later Naiyāyikas. But we have to note that he tried to focus on H through *aprasiddha*. He shows that if we do not use universally accepted *hetu* then there is a possibility of committing a fallacy. But the later Naiyāyikas rejected *aprasiddha* as a characteristic of *hetu*. They point out that even if any *hetu* is not famous we may use it in the process of inference. Again, suppose when I use it, then how can I say that that *hetu* is not famous ? This means that if we use any *hetu*, then that is known to us. Again, the knowledge of *hetu* is based on some past experience, and this experience would be such that it would also be based on some other sources. Then, how can one say that such and such object is not famous or *aprasiddha* ?

Gautama : Gautama too like Kaṇāda has not furnished any general definition of *hetvābhāsa*. But he gives some hints while discussing points of defeat in which he holds out that fallacies are mere semblances of reason. A person who employs them in a disputation certainly deserves rebuke. In the *Nyāya-sūtra* we find

five types of *hetvābhāsas*.[1] We find three types of *hetvābhāsa* in the *Vaiśeṣika sūtra* i.e. (1) *viruddha* (contradiction), (2) *asiddha* (unproved) and (3) *samdigdha* (doubtful). Gautama accepts only one classification of Kaṇāda i.e. *viruddha* (contradiction). The other four varieties of *hetvābhāsa* according to Gautama are as follows : *savyabhicāra* (indecisive), *prakaraṇasama*, *sādhyasama*, and *kālātīta* (mistimed).

Gautama very briefly and without details or justification lists five varieties of *hetvābhāsas*.

(1) The *savyabhicāra* (inconclusive) is that which is tainted by indecision. The term '*vyabhicāra*' (indecision) means non-fixity on any one point. That is when a *hetu* is found to be concomitant with neither the *sādhya* only, nor the negation of the *sādhya* only, but with both—then it is said to be tainted by *vyabhicāra* or indecision, and that which is accompanied by this 'indecision' is the 'indecisive'.[2]

(2) A certain doctrine or view having been accepted, the *hetu* that is contradictory to it is called the 'contradictory' or *viruddha*.[3]

(3) The neutralised *hetu* (*prakaraṇa-sama hetu*) is that which is put forward to establish a definite conclusion, while it is one that only gives rise to suspense and vascillation in regard to the point at issue.[4]

(4) The unknown *hetu* (*sādhyasama hetu*) is that which, being still to be proved is not different from the Sādhya.[5]

(5) The mistimed *hetu* is that which as adduced, is behind time.[6]

Gautama's *Nyāya-sūtra* is the first arranged work on this topic. The later Naiyāyikas hold Gautama's view regarding *hetvābhāsa* with some modification. Again, every Naiyāyika only commented on and illustrated Gautama's contentions. Some

1. NS. 1.2.5.
2. NS. 1.2.6.
3. NS. 1.2.7.
4. NS. 1.2.8.
5. NS. 1.2.9.

reduced these five *hetvābhāsas* into three and some extended their number to six, and so on.

Vātsyāyana : General definition - Vātsyāyana points out that fallacies of the *hetus* are called *hetvābhāsa* because these *hetus* do not possess the characteristics of the *hetus* proper and yet they appear like the *hetus* because of their similarity to them [1]

Vātsyāyana follows Gautama's list of fallacies which has already been mentioned. But Vātsyāyana helps us a bit in understanding contradiction and mistimed. He observes that the contradictoriness of a *hetu* occurs when one puts forth as *hetu* a term which contradicts something he himself holds—either the hypothesis itself or something else which the speaker holds to be true along with the hypothesis. As for mistimed, Vātsyāyana rejects the notion that it merely means the case where one member is spoken of today and the other a year from now. Actually, he says, what is meant under mistimed is fallacy of equivocation in general. This is what is Vātsyāyana's achievement in the history of Indian philosophy on this point. Another point regarding his achievement is that he explained Gautama's view, and tried to understand them through examples.

Praśastapāda : He also did not give any general definition of *hetvābhāsa* He accepted one to three of Kaṇāda's classifications of *hetvābhāsa*, but then added one of his own, i.e. '*anadhyavasita*' and he defined it as, "that putative *hetu* which is too specific (*asādhāraṇa*) so that the *pakṣa* and *hetu* terms are identical, as in "this hill is possessed of fire, because it is this hill."[2]

The addition of *anadhyavasita* in the list of fallacies is the only achievement of Praśastapāda.

Uddyotakara : The general definition of hetvābhasa, as Uddyotakara puts it, is that those *hetus* that are wanting in one or the other of the properties of the *hetu* (i.e. valid *hetu*) and as such are non-*hetus*.[3] After giving the definition he points out that

1. NBh 1.1.1 and also NBh. 1.2.5-9.
2. *Padārthadharmasaṁgraha* edited by Durgadhar Jha Ganganatha-Jha Granthamala No. 1, Varanasi, 1963, pp. 576-98.
3. NV. 1.1.1.

the similarity among *hetu* and non-*hetu* consists in the following : (1) The non-*hetu*, like a true *hetu*, is formulated after the proposition (*pratijñā*) and this constitutes a similarity. (2) Possessing any one of the characteristics of the *hetu*: the *hetu* that is formulated for the purpose of proving the proposition is endowed with three characteristics or *liṅga* ; and if what is formulated happens to possess any one of these three, this constitutes a similarity. If the *hetu* is regarded as fulfilling two conditions, as some philosophers believe, then the similarity would consist in possessing of any one of the two characteristics. Therefore the difference between *hetu* and non-*hetu* lies only in this : while the former proves the proposition, the latter does not.[1]

Uddyotakara tells us that *sādhyasama* is the same kind of fault as *asiddha*, since if *hetu* needs proof as much as *sādhya* then it is safe to say that the *hetu* is *asiddha* (unproved). Uddyotakara offers an alternative account of the fallacy called *viruddha*. It occurs when the reason contradicts the hypothesis.

Bhāsarvajña[2] also supports Uddyotakara's general definition of *hetvābhāsa*. He listed six main varieties of *hetvābhāsa* viz. contradictory, unproved, indecisive, uncertain, *prakaraṇa-sama* and mistimed. His explanation of contradictions is that it is the fallacy which occurs when a *hetu* turns out to reside in both *sapakṣa* and *vipakṣa*. We just saw that this mistake was classified under doubtful. As for the unproved *hetu*, says Bhāsarvajña,[3] this covers all cases where it is doubtful that *hetu* occurs in *pakṣa*. He also points out that indecisive (*savyabhicāra*) turns out to occur whenever the supposed *hetu* occurs in *pakṣa*, *sapakṣa* and *vipakṣa* ; it would appear that whenever this happens the *hetu* will also be contradictory. And the uncertain *hetu* (*anadhyavasita*) is explained as in Praśastapāda. But when he explains *kālātīta*—he gives interesting interpretation in which he points out that *kālātīta* occurs whenever *hetu's* occurrence in *pakṣa* is sublated by a valid

1. NV. 1.2.4.
2. Karl H. Potter : *Encyclopaedia of Indian Philosophies*, Vol. II, pp. 403-406.
3. Karl H. Potter : *The Encyclopaedia of Indian Philosophies* Vol. II, pp. 403-406.

instrument. Thus Bhāsarvajña incorporates into his list of fallacies one of the added positive requirements of validity, indeed both, since others among fallacies, rule out the possibility that one *hetu* could prove both *sādhya* and its complement.

Vācaspati Miśra[1] equates the confusing "mistimed" *hetu*, with a fallacy called, "sablated" (bādha), which occurs when we have adequate reason to accept or reject the hypothesis without appealing to any *hetu*. Thus it is "mistimed" in the sense that, since there is no doubt about the hypothesis, there is occasion for an inference.

B
The Buddhists

Dignāga : Dignāga[2] also points out that if any *hetu* fails to fulfil all the three characteristics it will be called as *hetvābhāsa*. He holds three types of *hetvābhāsa* viz. (1) unproved (*asiddha*), (2) uncertain (*aniścita*) and (3) contradictory *viruddha*.

(1) *Unproved*—He points out that 'unproved' *hetu* occurs when either both or one party in a dispute recognises the lack of truth of the *hetu*.

(2) *Uncertain*—When *hetu* is wholly present and wholly absent in *sapakṣa* and *vipakṣa* respectively. Again, when *hetu* is wholly absent in *sapakṣa* and *vipakṣa*, or *hetu* is partially present and partially absent in both *sapakṣa* and *vipakṣa*. Then that *hetu* is known as uncertain.

(3) *Contradictory*—Dignāga points that contradictory *hetu* occurs when *hetu* is wholly absent in *sapakṣa* but in *vipakṣa* that *hetu* is found either wholly present or partly present.

Dharmakīrti followed Dignāga's definition of *hetu* and also the classification of *hetvābhāsa*. He criticizes the Vaiśeṣika classification of *hetvābhāsa*, as *aprasiddha*, *a-sat* and *sandigdha*. He points out that *aprasiddha* cannot be a *hetvābhāsa*. A *hetu* can be *aprasiddha* either when there is no example or when a thing is not well-known. If it has no example or if it is not known existing in

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1. Ibid. p. 193.
2. Satkari Mookerjee, *The Buddhist Philosophy of Universal Flux*, p. 347.

the *sādhya*, then such a thing cannot be called *hetu*. It will be against the very idea of the *hetu*. The Vaiśeṣikas themselves have admitted in VS. 3.1.11 that a *hetu* must be well-known at the time when its relation to the *sādhya* is to be established. *Asat* also cannot be a *hetvābhāsa* ; so also the *sandigdha hetvābhāsa* is actually not *sandigdha*. Let us take "having horns" as a well-known mark or *liṅga*. If a horse has no horn, then it is not a cow. Actually a horse has no horn, so having horn is a *hetu*. Therefore, such an *asat-hetu* of a thing which is non-existent and a non-existent thing is never experienced. In this example not only the absence of a horse is known but the contrary of the horse is known. So the knowledge of non-horse means a cow. The knowledge of non-horse is not the knowledge of *abhāva*, because an *asat-hetu* establishes a contrary, therefore, this *hetu* is *viruddha*. Dignāga merged *asat* into *viruddha*. Dharmakīrti also accepts it.

Sandigdha hetu is not a separate *hetvābhāsa*. It is a *hetu* which does not state all the conditions fully. Doubt arises not because of *hetu* but because a *hetu* is not fully stated or elaborated. Therefore the position of the Vaiśeṣika regarding the *hetvābhāsa* is not correct.

From the above consideration we can say that Dharmakīrti[1] accepts the following variety as already stated. These are : (1) *asiddha*, (2) *anaikāntika* and (3) *viruddha*.

C

Navya-Nyāya

Gaṅgeśa : Gaṅgeśa provides three general definitions of *hetvābhāsa*. These are : (1) *hetvābhāsa* is the object of that valid cognition which is opposite of the absence of the instruments of the inference[2] (2) *Hetvābhāsa* is that object which if known prevents the knowledge of *liṅga* from leading to an inference.[3] (3) *Hetvābhāsa* is that characteristic which prevents known inference.[4]

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1. H.I.L. pp. 314-15.
2. T.C. p. 1580.
3. ibid.
4. ibid

Gaṅgeśa[1] classifies *hetvābhāsa* as follows (1) *savyabhicāra*, (2) *viruddha*, (3) *satpratipakṣita*, (4) *asiddha* and (5) *bādhita*.

To sum up, we find nine varieties of *hetvābhāsa* in the history of Indian logic. These are as follows : (1) *viruddha*, (2) *asiddha*, (3) *sandigdha*, (4) *savyabhicāra* or *anaikāntika*, (5) *prakaraṇasama*, (6) *sādhyasama*, (7) *kālātīta*, (8) *anadhyavasita*, and (9) *bādha*. These are listed more clearly in the following table :

Hetvābhāsas as accepted by different philosophers

	Praśastapāda	Bhāsarvajña	Dignāga	Uddyotakara	Dharmakīrti	Gaṅgeśa
1.	A-siddha	A-siddha	Asiddha	Sādhyasama	Asiddha	Sādhyasama
2.	Sandigdha	Anaikāntika	Aniṣṭa	Savyabhicāra	Anaikāntika	Savyabhicāra
3.	Anadhyavasita	Anadhyavasita	—	—	—	—
4	—	Satpratipakṣa	—	Prakaraṇasama	—	Satpratipakṣa
5.	Viruddha	Viruddha	Viruddha	Viruddha	Viruddha	Viruddha
6.	—	Kālātīta	—	Kālātīta*	—	Bādha*

* This sign indicates that the Buddhists deal with *Kālātīta* and *Bādha* as *Pakṣābhāsa*.

1. H.I.L. p. 438.

III

NAVYA-NYĀYA DEFINITIONS OF HETVĀBHĀSA

In the previous section I pointed out that in the early history of Indian Philosophy no specific definition of *hetvābhāsa* is to be found. There are definitions of invalid inferences only. In an earlier section I pointed out that the fallacies of inference ultimately arise on account of the *hetvābhāsa*. This implies that invalid inference comes under *hetvābhāsa*. Gaṅgeśa was the first person who provided comprehensive definitions of invalid inference i.e. *hetvābhāsa*. In the previous section I just mentioned the definitions of *hetvābhāsa* in outlines. In this section, I propose to consider them in depth.

Definitions given by Gaṅgeśa

D_1 *Hetvābhāsa* is the object of that valid cognition which is opposite of the absence of the instruments of inference.[1]

D_2 *Hetvābhāsa* is that object which if known prevents the knowledge of *liṅga* from leading to an inference.[2]

D_3 *Hetvābhāsa* is that characteristic which prevents known inference.[3]

D_1 can be interpreted as follows : The fault of a *hetu* is its being the object of some valid cognition which is the counter-correlate (*pratiyogin*) of such an absence as is a causal condition of inference.

Now let us, first, try to understand what Gaṅgeśa tries to communicate with the help of this phrase 'being the object of some valid cognition', in the context of *hetvābhāsa*. Gaṅgeśa actually tries to say that in the process of inference we have to pass through all the five *avayavas* (members) of inference—statement where we use both the view i e. view (*pakṣa*) and counter-view (*pratipakṣa*), for making our inference valid. Consider the valid inference : "The hill is fiery (*pratijñā*) ; because it has smoke

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1. tatra anumiti-kāraṇībhūta-abhāva-pratiyogi-yathārthajñāna-viṣayatvam. TC, p. 1580.
2. yadviṣayatvena liṅga-jñānasya anumiti-virodhitvam—ibid.
3. jñāyamānaṁ sadanumiti-pratibandhakaṁ yat tattvaṁ hetvābhāsatvam.—ibid.

(*hetu*) ; whatever is smoky is fiery like a kitchen, unlike a lake (*udāharaṇa*) ; this hill is smoky (*upanaya*) ; therefore, it is fiery (*nigamana*)." In order to show that the inference is valid we have to give both the instances in which, on the one hand, *hetu* is present and, on the other hand, it is found absent. Somebody may propose that 'lake has no fire, because it has no smoke'. In the above example 'lake' has been used with the intention to show that in lake there is no fire and no smoke. But when somebody intentionally argues—'lake has fire, because it has smoke', then his intention may be only to confuse his opponent. The second way of arguing may never be valid but the first way may assume validity.

Gaṅgeśa points out that 'lake' is used as the 'opposite locus (*adhikaraṇa*) in which both 'fire' and 'smoke' are found absent. But in the second case 'lake' becomes the subject which we have yet to prove. How, then, that becomes the subject which was used previously as 'the absence of the instruments of the inference ?' If it is used in this sense, then it becomes fallacious. Smoke is to be known by means of a *pramāṇa* (here perception) existing in the *pakṣa*. The object of this valid Perceptual cognition is 'smoke existing in lake'. But such a cognition, even though it may be valid, cannot serve as a means of the inferencial cognition of 'fire in the lake' merely because fire and lake are never known existing together. The knowledge—'smoke in the lake' if valid, ensures the absence of the knowledge 'fire in the lake'. Here the *hetu* (i.e. smoke) as qualified by its relation to *pakṣa* is contradictory to any possible inferencial knowledge of *sādhya* (i.e. fire) as qualified by its relation to the same *pakṣa*. Only one of the two knowledges are possible at one time. Of these two knowledges one has to be valid but it cannot be the inferencial knowledge because the instrument employed to achieve it (i e. the knowledge of smoke in lake) is its contradictory. Both the knowledges cannot be invalid because then that will not bear the semblance (*ābhāsa*) of *hetu*. It is in this sense that Gaṅgeśa says that the *hetvābhāsa* is the object of valid cognition. This is what Gaṅgeśa pointed in D_1.

Further, Gaṅgeśa implies that if one uses 'lake' in the second way, then it would prevent the knowledge of *liṅga* (or hetu).

Smoke a *hetu* in itself is fully competent to lead to the inference of fire. But here the knowledge that lake is the locus where the existence of fire is to be proved would prevent the inference of fire even though smoke be 'perceived' in the lake. This additional knowledge renders the knowledge of *hetu* useless. This is what has been said in D_2. Let us see how it prevents the knowledge of *liṅga*? Consider again 'lake has fire, because it has smoke'. From this we cannot say that where there is lake there must be fire on the basis of smoke. It is true the where there is smoke there must be fire. But this example prevents us from saying like that. The reason behind this is that we are unable to trace out a single instance where we find both water (lake) and fire existing together. So this becomes fallacious because water is used to prevent fire and not as the locus of it. Then how can these two go together? In this sense lake's having fire being untenable even the knowledge of *liṅga* (or *hetu* i.e. smoke) in the lake could prevent inference. This is what Gaṅgeśa tries to communicate in D_2.

From D_1—D_2 of Gaṅgeśa it is clear that *hetvābhāsa* is that characteristic which prevents known inference (D_3). Of course, 'lake's having fire because of smoke' is that instance which goes against our perception. Therefore we can say whatever is against our perception strikes off valid inference. On the basis of smoke one can easily infer fire but if smoke is stated to be existing in lake against all experience then smoke acquires a special characteristic which will not allow the inference of fire even though under normal conditions such an inference is known to have taken place.

Out of these three definitions of *hetvābhāsa* given by Gaṅgeśa D_1 emphasizes *contradiction* between valid cognition of *hetu* and the inferencial cognition by pointing out that a contradictory *hetu* cannot be an instrument for the inferencial cognition. D_2 takes into account those conditions which vitiate an otherwise efficient *hetu* to be unable to lead to a desired inference. Here the emphasis is more on the conditions like *pakṣa* (*sapakṣa* and *vipakṣa* included) than on the contradictory character. Like contradiction in the case of D_1 variation generated by these conditions would be more pronounced reason for rendering it as an invalid *hetu*. D_3 is more comprehensive and includes the features of both D_1 and D_2. In this way these definitions differ only in emphasis, they all hold that

in *hetvābhāsa* no inference takes place and the *hetu* by fulfilling some of the conditions must 'look' on its face a valid *hetu*. No such thing could be considered to be worthy even of being called *hetvābhāsa* if this in no way would look like *hetu*. In the attempted inference : "The hill has fire because of pa, pb, pc..." would not be presented as a case of *hetvābhāsa* because pa, pb, pc (unmeaning marks) adduced as *hetu* do not resemble any. It will be just non-sense but *hetvābhāsa* is not non-sensical.

These definitions can be replaced by a broader definition (D_4)[1] which covers all the points emphasized in D_1—D_3 and tries to make it clear that actually preventing an inference on the part of *hetvābhāsa* should neither be interpreted in terms of psychological or even epistemic prevention. *Hetvābhāsa* really affects the validity of inference. Thus we may have :

D_4 : *Hetvābhāsa* is that characteristic of an object which rules out the possibility of the determination of the validity of inference.[1]

1. This difinition is attempted by the present writer.

CHAPTER III

SAVYABHICĀRA (*INCONCLUSIVE*) *HETU*

Gautama explains[1] that the inconclusive *hetu* is that which is tainted by indecision. The term '*vyabhicāra*' means non-fixity on any one point ; that is, when a *hetu* is found to be concomitant neither with the *sādhya only*, nor with the negation of the *sādhya only*, but it is so with both then it is said to be tainted by *vyabhicāra* or indecision ; and that which is accompanied by this 'indecision' is the 'indecisive' or *savyabhicāra hetu.*

I
THE NYĀYA VIEW

Some philosophers call *savyabhicāra* as '*anaikāntika*'. The term *anaikāntika* is explained by the *Nyāyasūtra-vivaraṇa*[2] meaning that it is a *hetu* which does not exclusively (*anta*) exist either in the locus of *sādhya* or of its absence.

On this sūtra the *Tātparya* remarks that the terms 'inconclusive' and 'indecisive' being synonymous—which is the term defined and which is the defining term should vary with the hearer. If he knows the meaning of 'inconclusive' and not that of 'indecisive', then, the latter shall be for him, the defined term, and the former, the defining term, and so *vice versa*.

Consider this reasoning 'Sound is eternal, because it is intangible ; the jar which is tangible has been found to be non-eternal,— and sound is not intangible,—therefore being intangible sound must be eternal'. In this reasoning we find that the character of *intangibility* has been put forward as proving the character of *eternality*. As a matter of fact the two characters do

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1. NS. I.2.5.
2. ekasya sādhyasya sādhyābhāvasya vā *ante* adhikaraṇamātre yas tiṣṭhati sa ekāntaḥ, tadanyaḥ anekāntaḥ ekasmin ante yo niyataḥ.

not bear to each other the relation of proof and proved (i.e. *hetu* and *sādhya*) : (as all *non-eternal* things are not tangible, e.g. *buddhi*, is non-eternal and yet it is intangible). We find that ātman (soul) is intangible and yet eternal. If the soul and such other things which combine *eternality* with intangibility be cited as the instance (supporting the reasoning), then—inasmuch as the *hetu* has been defined as 'that which establishes the *sādhya* through similarity to the instance,[1]—'intangibility' will have to be regarded as the *hetu* ; and this would be found to be not necessarily concomitant with *eternality*,—e.g. in the case of *buddhi*, which is *intangible* and yet *non-eternal.* So in both the kinds of instance (in that of *dissimilarity*, in the case of *jar* cited before, which is tangible and non-eternal, and in that of *similarity*, as in the case of *soul*, which is intangible and eternal), there is 'indecision', non-concomitance, between intangibility and eternality ; and thus these cannot be accepted as *hetu* and *sādhya.* Thus, not fulfilling the conditions of the *hetu*, what is cited in the above reasoning cannot be a *sad-hetu.*

From the above consideration we may say that if the term '*anaikāntika*' be taken as embodying the definition and '*savyabhicāra*' as the term defined, the word '*anaikāntika*' should be explained as follows : In the reasoning cited, 'eternality' is one 'anta', point, and 'non-eternality' is another one 'anta' ; that which subsists in (is concomitant with) one point would be 'ekānta', one-pointed or exclusive ; and the contrary (i.e, not concomitant with one) would be '*anaikāntika, not one-pointed* or non-exclusive. As this would be concomitant with both i.e. the *sādhya* (eternality) and its contrary, (*non-eternality*).

Thus we have seen that Gautama uses the word *anaikāntika* to define *savyabhicāra* and Vātsyāyana shows that the two words have identical significance. '*Vyabhicāra*' means irregular connection and a *hetu* is called *savyabhicāra* when it has irregular connection with both *sapakṣa*, i.e. an indisputable locus of the *sādhya*, and *vipakṣa*, i.e. an indisputable locus of the absence of the *sādhya*. *Sapakṣa* and *vipakṣa* being conceived as the two ends (*anta*), *anaikāntika* (literally, not exclusively connected with any

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1. NS. I.1.34.

(*anta*) also means a *hetu* irregularly connected with both *sapakṣa* and *vipakṣa*.

Vātsyāyana illustrates[1] 'the irregular' with the following inference : "Sound is eternal, because it does not possess the quality of touch." In this inference, 'absence of the quality of touch' is alleged to be the *hetu* and 'eternality', the *sādhya*. Thus the *hetu-sādhya* relation (*vyāpti*) is here : Positively—'The absence of the quality of touch' is invariably related to eternality as in the instance of soul. Here soul is the instance based on similarity or *sādharmya*. *Negatively*, the absence of 'the absence of the quality of touch' (i.e. the presence of touch) is invariably related to the absence of 'eternality', i.e. the presence of non-eternality, as in the instance of the jar. Here jar is the instance based on dissimilarity or *vaidharmya*.

But this *vyāpti*, in both the forms, is untenable because the alleged *hetu* is irregularly connected with the *sādhya* ; its absence being found related to the presence of the *sādhya* and its presence being found as related to the absence of the *sādhya*. Thus—(1) The atom, though possessing the quality of touch, i e. though related to the absence of 'the absence of the quality of touch', is eternal. (2) Knowledge though not possessing the quality of touch, i.e. though related to the presence of 'the absence of the quality of touch', is non-eternal.

Uddyotakara mentions four possible objections to the Nyāya definition of this fallacy and answers each of them at some length.[2]

(a) It is objected that the term *anaikāntika* (not fixed in one point) is a negative term with a negative particle '*an*' meaning either exclusion (*paryudāsa*) of what is denoted by the term following it or total absence (*prasajya-pratiṣedha*) of what is denoted by that term. In the former case it has a positive meaning while in the latter case it signifies complete negation of what is denoted by the following term. In the present context the former interpretation would mean that the negative particle (*an*) in the word for the fallacy (*anaikāntika*) would exclude all the other

1. NBh. I.1.34.
2. GNP, pp. 279-81.

kinds of fallacy. In the latter interpretation it would imply the total absence of all other fallacies.

Uddyotakara while answering this objection points out that *prasajyapratiṣedha* does not mean total absence. The negative particle is a qualifier and as such it must qualify a qualificand that exists. For instance, in the word *abrāhmaṇa* (non-Brāhmaṇa) the negative particle does not mean that what is denoted by the following term 'Brāhmaṇa' does not exist ; for we know that men are Brāhmaṇas.

Thus there is no justification for saying that the negative particle in the word for the fallacy does not mean that the other fallacies are not possible.

(b) The definition of the *savyabhicāra* as pointed out by Vātsyāyana, lends itself to the interpretation that *savyabhicāra* is the definiendum and *anaikāntika* the defined. This interpretation the second objection holds, is not proper, for the term '*anaikāntika*' has not been explained anywhere by the commentator and we cannot therefore understand the exact nature of the *savyabhicāra* fallacy. Hence, it is not right to define the '*savyabhicāra*' as '*anaikāntika*'.

Uddyotakara in answer to this objection holds that such a definition is quite proper. What is meant by the term '*anaikāntika*' is known from ordinary usage. There is need for an explanation, in a '*śāstra*', of only such things as are not known from ordinary usage. It would be absolutely futile to provide explanations of terms that can be known from ordinary usage. In the case under consideration we know it from experience that the word '*anaikāntika*' signifies that which subsists in both aspects of a thing. If terms current in ordinary usage had to be explained in the *śāstra* itself, we might then be compelled to provide adequate explanation of such ordinary words as 'pain and the lake'. Hence the view expressed by Vātsyāyana is quite appropriate.

(c) Third objection is that the definition of *savyabhicāra* is not correct, because it is not comprehensive enough. It does not cover all kinds of *savyabhicāra* ; for instance, the 'too narrow' (*asādhāraṇa*) *hetu* would not be covered because here *hetu* may be confined exclusively but to a narrow segment of *sādhya*.

This contention, says Uddyotakara, is not right, as this kind of too narrow *hetu* is actually covered by the definition. The *hetu* which is 'too narrow' may be found to be such as is found in both homogeneous and heterogeneous classes of objects, and thus can be called *savyabhicāra*.

(d) According to some philosophers, the *prakaraṇasama* fallacy is included in the category of the *savyabhicāra*. For example, we have the reasoning : 'The soul is non-eternal, because it is different from the body'. Here we find that the difference from the body is something that subsists in eternal as well as non-eternal things. Thus it fulfils the condition of the *savyabhicāra* also, thus making *prakaraṇasama* redundant.

Uddyotakara points out that these philosophers have not really understood the exact meaning of *vyabhicāra* of defining properties and the *vyabhicāra* of examples. When the Naiyāyika says that *savyabhicāra* is *anaikāntika*, he is giving a definition of the *savyabhicāra* fallacy. If the characteristic mentioned in the definition is found in the *prakaraṇasama* fallacy, then alone the definition can be said to be 'too wide', i.e. including fallacies other than the *savyabhicāra*. The fact that a certain example of the *savyabhicāra* is found to fulfil the conditions of some other kind of fallacy does not constitute a defect in the definition of the *savyabhicāra*. For, the only circumstances that can make a definition defective are when the definition does not cover all the elements that it should cover or when it includes what does not strictly belong to it. Certainly neither of these defects is found in the example given in the objection. Nor can the fact that the example fulfils the condition of another fallacy constitute a defect of the present definition.[1]

Here it is worthwhile to point out that the latter Naiyāyikas hold that *savyabhicāra* is of three forms, viz. *sādhāraṇa*,[2] *asādhāraṇa*[3] and *anupasaṁhārī*.[4] Vātsyāyana's interpretation of *savyabhicāra* corresponds to the *sādhāraṇa*.

1. NV. I.2.5.
2. T.C., p. 1702.
3. ibid. p. 1721.
4. ibid. pp. 1747-48.

Savyabhicāra in the form of *asādhāraṇa* is a *hetu* which is present neither in the *sapakṣa* nor in the *vipakṣa*. It is present only in the *pakṣa*. Thus, for example, "Sound is eternal because it possesses sound-ness." 'Sound-ness' (*Śabdatva*) exists only in sound, which is the *pakṣa*, and is not found in anything eternal (i.e. *sapakṣa*) nor in anything non-eternal (i.e. *vipakṣa*).[1]

Again, *savyabhicāra* in the form of *anupasaṁhāri* occurs only when there is no instance based either on similarity or on dissimilarity for the inference. Thus, consider this instance : 'Everything is knowable because of being object of valid cognition.' No instance can be cited for this inference, for anything cited as an instance would be included in the *pakṣa* viz. 'everything'. But the *pakṣa* cannot be cited as an instance, because the presence of the *sādhya* is yet to be proved in the *pakṣa*, whereas an instance cited is something in which the presence of the *sādhya* is already proved.[2]

To sum up the Nyāya contention we can say that the two terms *savyabhicāra* and *anaikāntika* are synonymous,[3] and yet either one can be used as a definition of the other. To the person who knows the meaning of one term, this will supply the definition of the other.

II

THE BUDDHIST POSITION

Dignāga calls this fallacy *sandigdha*. The reason is that he points out that if in an inference *hetu* becomes *sandigdha* or uncertain in that case we can rather say that it is inconclusive. Therefore Dignāga explains[4] this fallacy as pointing to the failure of the major premise to yield a conclusive argument.

Dignāga's classification of *sandigdha* (uncertain) *hetvābhāsa* is as follows :

(1) *Sādhāraṇa* (*'being too broad'*), i.e. the syllogism is

1. T.C. p. 1721.
2. T.C. pp. 1747-48.
3. NS. 1.2.5.
4. IL, p. 293.

inconclusive because the scope of *hetu* is too broad. For example a *śābdika* against a Buddhist may argue "Sound is permanent, because it is knowable."

(2) *Asādhāraṇa* ('*being too narrow*'), i.e. the syllogism is inconclusive because the scope of the *hetu* is too narrow. A *Śābdika* against a Vaiśeṣika : "Sound is permanent, because it is audible."

(3) *Sapakṣaikadeśavṛtti Vipakṣavyāpi* 'Similar-partial, dissimilar-whole', i.e. the syllogism is inconclusive because the property expressed by the *hetu* is present in some similar instances and in all dissimilar instances. For example, a *śabdotpattivādin* against a *śabdābhivyaktivādin* : "Sound is not a product of effort, because it is impermanent."

(4) *Vipaṣaikadeśavṛtti Sapakṣa-vyāpi* "Dissimilar-partial, similar-whole," the syllogism is inconclusive because the property expressed by the *hetu* iś present in all similar instances and in some dissimilar instances, e.g. "Sound is a product of effort, because it is impermanent."

(5) *Ubhayapakṣaikadeśavṛtti*, 'Both partial', i.e. the syllogism is inconclusive because the property expressed in the *hetu* is present in some similar instances and in some dissimilar instances. A śābdika against a Vaiśeṣika : "Sound is permanent, because it is intangible".

(6) *Viruddhavyabhicāri* 'Being counterbalanced', i.e two syllogisms yield mutually opposite conclusions. A Vaiśeṣika against a *śabdotpattivādin* : "Sound is impermanent, because it is a produce". The *śabdotpattivādin* replies : "Sound is permanent, because it is an object of audition, like sound-ness."

In Dignāga's ***hetucakra*** the centre is occupied by the ***hetu*** which possesses the minimum of comprehension.[1] This ***hetu*** is ascertained as being present neither in the similar nor in the dissimilar instances. It is conterminous with the *pakṣa*, and therefore inconclusive. For instance, if we say that the sounds of the Veda are eternal substances because they are audible, the *hetu*

1. asādhāraṇa.

'audibility' will be present in the *pakṣa*, sound, exclusively. It will be absent in all similar as well as in all dissimilar instances. It will be 'too narrow' and therefore inconclusive. But it can receive considerable practical importance, just as the 'contrary' *hetu*, when it is concealed behind some not sufficiently analysed and unclear concepts or expressions. In any case it represents the minimum of conclusiveness.

"Certainty is one issue", says Dharmottara,[1] "it is the aim of the syllogism which becomes then conclusive. Inconclusive is uncertain. It is a case when neither the conclusion nor its negation can be ascertained, but, on the contrary, the only result is doubt. We call uncertain a reason *hetu* which makes us fluctuate between a conclusion and its denial."

For the convenience sake, here, I wish to draw Dignāga's *hetu cakra* once again in the following table :

Hetucakra Table

Right

uncertain	1. All S *1 and All D *2	over-wide	4. All S and No D	right	7. All S and Some D	overlapping	uncertain
inverted	2. No S and All D	contradictory	5. No S and No D	over-narrow	8. No S and Some D	contradictory	inverted
uncertain	3. Some S and All D	overlapping	6. Some S and No D	right	9. Some S and Some D	overlapping	uncertain

*1 'S' denotes similar cases.

*2 'D' denotes dissimilar cases.

1. NBT, p. 65.18 ; transl. p. 180.

The common feature of all these uncertain or *anaikāntika hetu* is that in all of them the contraposition of the major premise is either wrong or doubtful.[1] It is an infringement of the third clause of the syllogistic canon or *trairūpya*. In these cases the total absence of the reason in dissimilar instances is either falsified or is doubtful. Although the third clause of the syllogistic canon is but another aspect of the second clause, nevertheless it is this aspect of the clause which is directly attended to in all fallacies of uncertainty. Therefore it was necessary for Vasubandhu and Dignāga to distinguish between these two clauses, i.e. among the syllogisms of Agreement and the syllogisms of Difference, or between the modus ponens and the modus tollens of the mixed hypothetical syllogism.

The four varieties of the uncertain *hetu* which contain a direct infringement of the third clause of the syllogistic canon i.e. (1) all S and all D, (2) Some S and all D, (3) all S and some D and (4) some S and some D are situated in the four corners of Dignāga's table. The two of them, i.e. (1) and (2), have that feature in common that the overlapping *hetu* is present in the whole forbidden field of dissimilar instances. The other two, i.e. (3) and (4), have a *hetu* which overlaps only a part of the forbidden domain.

If we draw across Dignāga's Table two diagonal lines, they will cross in the centre occupied by the "over-narrow" *hetu* and will unite it with all four corners where the four "uncertain *hetus*" reside. At the same time these diagonal lines will separate the "uncertain *hetus*" from the certain ones.[2]

Now we shall consider these fallacies one by one : (1) *Over-wide* : This type of *hetu* occurs only when it is present is all similar instances as well as in all dissimilar instances. The form of such type of *hetu* will be as follows : "All S and all D". It is uncertain in the same degree as the over-narrow *hetu*. The form of 'over-narrow' *hetu* will be as follows : "No S and no D". If we say that "the sounds of the Veda are eternal entities, because they are cognizable"[3], the reason (*hetu*) 'cognizability' is equally found

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1. asiddhavyatirekin or sandigdha-vyatirekin.
2. Stcherbatsky BL. Vol. I, pp. 323, 332-33.
3. NB and NBT.

in eternal entities, like space, and in the impermanent ones, like jars etc. Its theoretical importance is considerable, as showing the minimum limit of an *overlapping hetu*, just as the "over-narrow" one shows its minimum limit. In its crude form it could hardly be met with in practice.

(2) *Overlapping* : Dignāga mentioned three sub-varieties of this type of fallacy. It occurs when the *hetu* may be present either in (a) Some S and all D, or (b) all S and some D, or (c) some S and some D. Let us see these varieties one by one.

(a) *Hetu* must be present in some instances and also found in all dissimilar instances. Dharmakīrti[1] gives the following example—"The sounds of speech are not produced by a conscious effort, because they are impermanent", In this case the *hetu* 'impermanence' is partially present in the similar cases, like lightening which is not a human production but is found absent in the other part of the similar cases, like space which is also not a human product. On the other hand, the *hetu* 'impermanece' is found to be present in all dissimilar cases, which is against the third rule for a true *hetu*, like jars etc. which are human productions and impermanent. Thus we can say wheresoever there is production by a human effort, the character of impermanence is also present. This fallacy is very close to contrary (*viruddha*) one and will hardly occur in its crude form. However the right mutual position of the three terms of (1) "Sounds", (2) "eternality" or unchanging existence and (3) "causal production" or changing existence, with its subaltern notion of "voluntary production", will be clearly established only by excluding all those their mutual positions which are not right. Their right logical position can be clearly and definitely established only *per differentiam*. If the logical theory can clearly show what in this case is excluded, only then will it definitely show what is included If we make the same transpositions with the three terms of the Aristotelian example, "Socrates is mortal, because he is a man", if we try every kind of position for the three terms 'Socrates', 'mortal' and 'man', in order to exclude the fallacious positions, we will have a corresponding fallacy of the second uncertain reason in the follow-

1. ibid. p. 66.8 ff ; transl. p. 182.

ing form "Socrates is not a man, because he is mortal". Such a reason is very near to the contrary one. The reason 'mortality' covers the whole field of dissimilar cases, since all men are not immortal, but mortal. However it is not a contrary reason (*viruddha-hetvābhāsa*) because it is present in a part of the similar cases also. Mortality is present among non-human beings, just as it is present in mankind.

(b) *Hetu* must be present in all similar cases and also in some dissimilar cases. This variety of uncertain reason consists in its presence in the entire domain of the similar instances and its partial overlapping into the contrary domain of dissimilar instances. This fallacy is the nearest to the right reason. It is of the most frequent occurrence. It is mostly a result of an illicit contraposition. If all things produced by an effort are impermanent it does not follow that all impermanent things are produced by an effort. If smoke is always produced by fire, it does not follow that fire always produces smoke. If all men are mortal, it does not follow that all mortal beings are men. This fallacy has been taken notice of by Aristotle and christened as the fallacy of inverted order (fallacia consequentis), that is of an illicit conversion between the reason and its logical consequence.

(c) *Hetu* must be present in some similar cases as well as in dissimilar cases. Dignāga gives the following example[1]—"The sounds of speech are eternal entities, because they are not bodies." A body is a physical entity of limited dimensions. In the similar field, among eternal entities, we find eternal atoms of the Vaiśeṣikas which are bodies and are eternal. But we also find space which is eternal and not a body of limited dimensions. In dissimilar field of non-eternal changing entities we find jars etc. which are bodies, and we find motion which is not a body. On the analogy of atoms we would conclude that sounds are unchanging. On the analogy of motion we should conclude that they are changing. The position of the *hetu* is quite uncertain, the uncertainty is here at its maximum.

The maximum of inconsistency is found in the contrary *hetu*, the maximum of comprehension in the over-wide fallacy, the

1. ibid. p. 66.12 ; t

minimum of comprehension in the over-narrow one, and the maximum of uncertainty in its 2c variety. The easiest and most natural fallacy is found in 2b.

Now we can say that the following varieties of *anaikāntika* or *sandigdha hetu* :—*sapakṣaikadeśavṛtti Vipakṣavyāpi*, *Vipakṣaikadeśavṛtti sapakṣavyāpi* and *ubhayapakṣaikadeśavṛtti*—are not parallel to *sādhāraṇa*. All of them belong to the category of being too broad. Therefore, either 3, 4, and 5 should be included in 1 ; and the resultant fallacy be called 'being too broad, or the fallacy 1 should be given a new name parallel to the other three viz. ubhayapakṣavyāpi, both-whole, defined as "The syllogism is inconclusive because the property expressed in the *hetu* is present in all similar instances and in all dissimilar instances". This is what Dignāga meant with over-wide.

Dharmakīrti points out that when another aspect of the *hetu*—its absence in counter-instances—taken singly—is unreal, the fallacy is called uncertainty.[1]

Supposing we wish to prove that a certain person is non-omniscient, or that he is subject to passions. If the fact that he is endowed with the faculty of speech and other attributes of a man, is quoted as a reason, its absence in contrary cases, i.e. with omniscient beings, becomes problematic. Therefore, the syllogism would have the following form :

(1) Whosoever is a man is non-omniscient. This one is a man.
He is non-omniscient.

(2) Whosever is a man is non-passionless.
This one is a man.
He is non-passionless.

In this case the predicate to be deduced is "non-omniscience", i.e. limited knowledge. A certain person, is a person whom the speaker has in view. This is the subject of the conclusion. A second predicate is the fact that he is subject to passions. When the fact of limited knowledge or the presence of passions are

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1. BL. Vol. II, p. 180.

asserted, such attributes as the faculty of speech, the opening and closing of the eyes etc. are inconclusive. Their absence in contrary cases, i e in omniscient beings, it is impossible to prove. The contrary case is omniscience. Whether omniscient beings possess them, it is impossible for us to decide. Consequently it is never known whether a speaker is omniscient or not. Speech is an uncertain *hetu*.[1]

The idea behind this argument is that an omniscient being should necessarily remain silent, since human speech is incompatible with omniscience, because it is adopted to express relative, but not unlimited knowledge, this idea is now being pressed in different combinations merely in order to exemplify logical rules.[2]

But it may be objected that there are no omniscient speakers in existence, why then should we entertain doubts regarding their faculty of speech ? Dharmakīrti points out that a negative judgment of the form "There are no omniscient speakers in existence concerns a fact which is essentially beyond any possible experience. Therefore, the absence of speech and human attributes in omniscient beings, i.e , in cases contrary to non omniscience, cannot be warranted.[3]

For this very reason the negative judgment "There are no omniscient speakers in existence" produces uncertainty. Why ? Because it refers to an object whose essence is to be beyond any possible experience, and this always leads to uncertainty. When a negative judgment refers to an object inaccessible to experience, negation then does not produce a necessary conclusion (*niścaya-hetu*) but a problematic argument. The absence of the faculty of speech in omniscient beings is therefore uncertain. Omniscience is the counter-instance in regard to limited knowledge, i.e. a case where the absence of *hetu* is ascertained. Since non-cognition whose object is irrepresentable (*adṛśya*) is a cause of doubt, not a cause of certainty, therefore is the exclusion of speech etc. from omniscience, which is the contrary of non-omniscience, is doubful.

1. ibid. p. 56.
2. N. Kārikā, p. 111 ff and the concluding part of Tattvas.
3. ibid.

The opponent may rejoin : not because of non-cognition do we declare that speech is absent in omniscience, but because of the contradiction of speech with omniscience. In other words we can say that it is not negative experience, which includes that omniscient beings do not speak, but because human speech is incompatible with omniscience[1]

Dharmakīrti says no, because the contraposed proposition, viz., "an omniscient being does not resort to speech" cannot be proved by negative experience. Neither can it be deduced from incompatibility with speech, because there is no contradiction between omniscience and the faculty of speech. Omniscience being problematic.

Such an inverted concomitance of the form "whosoever is omniscient is not a man" could be accepted as established, if omniscience and human speech were opposed by incompatibility or contradiction. But that is not the case. Therefore the inverted concomitance does not hold good. Somebody can ask : why ? The reason behind this is that because it is uncertain. Since, there is no opposition therefore the problem cannot be solved. And when uncertainty obtains the contraposed concomitance (*vyāptimān vyatireka*) is not established.

In short, such contraposition implying concomitance (vyāptimān) would exist between omniscience and the faculty of speech if they would be opposed. But there is no opposition. Therefore the contraposition does not really exist. Why ? He says, because of doubt. Since there is no opposition, therefore there is doubt. Because of doubt contraposition is not real (*asiddha*). In this way uncertain *hetu* differs from other *asad-hetu* i.e. *asiddha* and *viruddha*.

Now coming back to Dignāga's *hetucakra*. In it we find the following moods of uncertain fallacy : (1) *Sādhya vyāpaka* (PaH); *Sapakṣa vyāpaka* (SaH) ; and *Vipakṣavyāpaka* (VaH) ; (2) *Sādhyā vyāpaka* (PaH) ; *Sapakṣa vyāpaka* (SaH) ; and *Vipakṣaikadeśavṛtti* (VuH) ; (3) *Sādhyavyāpaka* (PaH) ; *Sapakṣaikadeśavṛtti* (SuH) ;

1. cp. N. Kārikā, p. 111.11—sarva-jñatāyā atyanta-parokṣāyāḥ kena cid api sahapratyakṣapratītena virodhānavagateḥ.

and *vipakṣavyāpaka* (VaH) ; (4) *Sādhyavyāpaka* (PaH) ; *Sapakṣaikadeśavṛtti* (SuH) ; and *Vipakṣaikadeśavṛtti* (VuH). These four moods are inconclusive being too broad. In *hetucakra* we find one more inconclusive mood which is known as being too narrow, i e. (5) *Sādhyavyāpa* (PaH) ; *Sapakṣavṛtti* (SeH) ; and *Vipakṣavṛtti* (VeH).

Thus Dignāga divided these figures into two groups. In the first group, which is known as inconclusive being too broad, we have the following figures :[1]

(1) (PaH). (SaH). (VaH)
(2) (PaH). (SaH). (VuH)
(3) (PaH). (SuH). (VaH)
(4) (PaH). (SuH). (VuH)

The second group is known as inconclusive being too narrow.

(5) (PaH). (SeH). (VeH)

III
FORMAL ANALYSIS

With the help of symbols we can write these figures as follows :[2]

(1) ~(EX) (fx.~gx). (Ex) (fx gx).~(EX) (~fx.hx.~gx). (EX) (~fx.gx.hx).~(EX) (~hx.~gx). (EX) (~hx.gx).

(2) ~(EX) (fg.~gx). (EX) (fx. gx).~(EX) (~fx. hx.~gx). (EX) (~fx. gx. hx). (EX) (~hx.~gx). (EX) (~hx. gx).

(3) ~(EX) (fx.~gx). (EX) (fx. gx). (EX) (~fx. hx. gx). (EX) (~fx. hx ~gx). ~(EX) (~hx.~gx). (EX) (~hx. gx)

(4) ~(EX) (fx.~gx). (EX) (fx.gx) (EX) (~fx.hx gx). (EX) (~fx hx.~gx). (EX) (~hx. gx). (Ex) (~hx ~gx).

(5) ~(EX) (fx.~gx). (EX) (fx. gx). (EX) (~fx hx.~gx). ~(EX) (~fx. hx. gx). (EX) (~hx.~gx). ~(EX) (~hx. gx)

Now let us demonstrate these five inconclusive *hetus*[3] one by one :

1. B.F. Li p. xxxii.
2. ibid.
3. ibid. pp. 21-22.

(1) We have seen up to now :

(PaH). (SaH). (VaH)=

~E (f.~g). E (f.g) ~E (~f.h.g.). E (~f g.h.). ~E (~h.~g). E (~h.g) (i)

(i) implies .E (~f.h.g). E (~h.g) (ii)

(ii) implies .E (g.h) E (g.. h) (iii)

(iii) implies ~U (g⊃~h), ~U(g⊃h) (iv)

Formula (iv) shows that 'g' implies neither h nor~h, the syllogism is therefore not conclusive 'being too broad.

(2) (PaH). (SaH). (VuH)=

~E(f.~g). E (f.g). E (~f.h.~g).~E (~f.h.g).~E (~h ~g). E(~h.g)–(i)

Like the type (i) (ii) implies~U (g⊃~h). ~U(g⊃h). It is therefore inconclusive in the sense of 'being too broad'.

(3) (PaH). (SuH). (VaH)=

~E (f.~g). E (f.g.). E (~f.h.g). E (~h. ~g). E (~h ~g) E(~h g) ..(i)

Like the type (1), (i) implies~U(g⊃~h). ~U(g⊃h)

It is therefore inconclusive in the sense of 'being too broad'.

(4) (PaH), (SuH). VuH)=

~E (f.~g). E(f g). E(~f.h.g). E(~f. h.~g).

E (~h. g). E (~h.~gh)...(i)

(i) implies ~U(g⊃~h). ~U(g⊃h), like the type (1). Hence inconclusive 'being too broad'.

Let us express these four in terms of the restricted predicate calculus :[1]

(1) gy.~(EX) (hx.~gx) (x≠y). (Ex) (hx. gx) (x≠y). ~(EX) (~hx. ~gx). (Ex) (~hx.gx)

(2) gy. ~(EX) (hx ~gx) (x≠y). (EX) (hx.gh) (x≠y). (EX) (~hx.~gx). (EX) (~hx.gx)

(3) gy. (Ex) (hx ~gx) (x≠y). (Ex) (hx.gx) (x≠y). ~(EX) (~hx.~gx). (EX) (~hx.gx)

1. ibid., p. 18.

(4) gy. (EX)(hx.gx) (x≠y). (EX) (hx.gx) (x≠y). (EX) (~hx ~gx). (EX) (~hx.gx)

are known, on the other hand; and (3) that the premises may be true or false.

E1 seems to be valid. In E2, gx does not exist; in E3, both gx and hx do not exist. One cannot make a mistake in the major premise (*sādhya*) without simultaneously making a mistake in the minor premise (*pakṣa*) also. In other words, the mistakes in non-existence of gx in the major premise (*sādhya*) should not happen if the minor premise (*pakṣa*) is free from that mistake.

However, in Dignāga's system, the subject (*pakṣa*) is excluded from the '*sapakṣa*'. If we take only the 'excluded major premise' into consideration :

(1a) : No non-human featherless biped is not mortal.

(2a) : No non-human unicorns is not mortal.

(3a) : No non-unicorn squared-circle is not mortal.

Then it will be difficult to find the difference between (1a) and the other two The reason is that because non-human featherless bipeds ; non-human unicorn and non-squared-circle are equally non-existence.

Therefore their corresponding contrary premise will be either equally true or equally false :

(1b) : No non-human featherless biped is mortal.

(2b) : No non-human unicorn is mortal.

(3b) : No non-unicorn squared-circle is mortal;

Now we are able to say that (1)-(4) contain two factors in common : (EX) (gx.hx) (x≠y) and (Bx) (gx.~hx). By dropping the restriction (x≠y), we have (EX) (gx hx) and (EX) (gx. ~hx), which imply ~ x) (gx ⊃ ~hx) and ~ (x). (gx ⊃ hx). They are therefore inconclusive.

Now let us consider the last type of inconclusive *hetu* which is the most controversial. The reason is that this type, i.e. (PaH). (SeH). (VeH), is very narrow to the right one, i.e. (PaH). (SaH). (VeH). The right one may be symbolised as follows :

"~(EX) (fx.~gx). (EX) (fx. gx).~(EX) (~fx.hx. hx.~gx). (EX) (~fx.gx.hx). (EX) (~hx.~gx).~(EX) (~hx.gx)"

For convenience let us first demonstrate the right one (*sad-hetu*).

(PaH). (SaH) (VeH)=

$\sim$ E (f. $\sim$g). E (f. g.).$\sim$E ($\sim$f h.$\sim$g). E($\sim$f h.$\sim$g).$\sim$E ($\sim$h.$\sim$g). $\sim$E($\sim$h.g.) ...(i)

(i) implies U(f$\supset$g).$\sim$E(f.$\sim$g).$\sim$E($\sim$f. h.$\sim$g). $\sim$E($\sim$h.g) E (h g) ...(ii)

(ii) implies U (f$\supset$g).$\sim$E(f h.$\sim$g).$\sim$E($\sim$f,h.$\sim$g).$\sim$E (g.$\sim$h).E(g h) ...(iii)

(iii) implies U (f$\supset$g),$\sim$E(h.$\sim$g).$\sim$E(g.$\sim$h).E(g.h) ...(iv)

(iv) implies U(f$\supset$g). U($\equiv$h) ...(v)

(v) implies U (f$\supset$g) ...(vi)

This type is valid for a universal affirmative conclusion.

Let us, now consider the inconclusive in the sense of 'being too narrow' which runs as follows[1] :

(PaH). (SeH). (VeH)=

E$\sim$(f.$\sim$g). E(f.g). E($\sim$f.h.$\sim$g).$\sim$E($\sim$f.h.g). E($\sim$h.$\sim$gh). $\sim$E($\sim$h.g) ...(i)

(i) implies $\sim$E ($\sim$f.g.h).$\sim$E(g.$\sim$h) ...(ii)

The region (f g h) is unknown, therefore we have :

E(f.g. h) V$\sim$E (f.g.h) ...(iii)

Combining (ii) and (iii) we have : $\sim$E($\sim$f.g h).$\sim$E(g.$\sim$h) E (f g.h) V$\sim$E (f.g.h) ...(iv)

(iv) implies $\sim$E (g.$\sim$h). E(g.h) V($\sim$E(g.h).$\sim$E(g.$\sim$h) ...(v)

The formula (v) shows that if (f.g.h) is non-empty, the syllogism is valid. Again, if it is empty, it is inconclusive. But if we examine the minor premise, and the factor$\sim$E(g.$\sim$h),

E(f.g)$\sim$E(g$\sim$h) $\supset$E(g.h) ...(vi)

combining (ii) and (vi), we have :

E(g.h)$\sim$E($\sim$f.g.h)$\supset$E(f.g.h) ...(vii)

The formula (vii) shows that the region (f.g.h) is non-empty, therefore the syllogism should be valid and not inconclusive.

1. ibid. p. 22.

According to usual syllogistic, the valid type, i.e. (PaH). (SaH) (VeH), and the invalid type, (i.e. in the sense of inconclusive 'being too narrow) i.e.

(PaH). (SeH). (VeH).. are of the following forms :

$(x)(fx \supset gx). (x)(gx = hx) \supset (x)(fx \supset hx)$ and
$(x)(fx = gx), (x)(gx \supset hx) \supset (x)(fx \supset hx)$.

The difference between them is whether the major (*sādhya*) or the minor (*pakṣa*) premise is a formal equivalence. They should be equally valid. Why did Dignāga accept the former and reject the latter ?

An old criticism, repeated by J. S. Mill, charged the Aristotalian syllogistic of being faulty on account of *petitio-principli.* Dignāga's introduction of *sapakṣa* which is 'excluded' type of the major premise seems to have managed to escape from Mill's objection.

The type (5), i.e. inconclusive 'being too narrow', is a limiting case. In the syllogism : "All men are mortal", etc., if the minor premise is "Socrates is the only man in the universe," the difficulty will be more obvious.

Let us consider this problem from both the points of view of intension and the extension. First, all the minor (*pakṣa*), middle (*hetu*) and major (*sādhya*) terms should differ from one another in intension. Otherwise, the syllogism will be pointless because of lacking of practical inference.

Both Dignāga and Mill are reasoning from the point of view of extension. Is it necessary that the minor term (*pakṣa*) and the middle term (*hetu*) should differ in its extension ? Instead of using Indian illustrative cases such as 'Sound', let us use the traditional cases (in Western sense) such as 'featherless bipeds' to demonstrate this point as follows :

E1 : All men are featherless bipeds ;
All featherless bipeds are mortal ;
Therefore, all men are mortal.

E2 : All men are unicorns ;
All unicorns are mortal:
Therefore, all men are mortal.

E3 : All unicorns are squared-circles ;
All squared-circles are mortal.
Therefore all unicorns are mortal.

The above examples are, unfortunately, very odd ones; a few assumptions, therefore, should be added, viz :

(1) That the three conclusions are unknown ; (2) that existence of men and of featherless bipeds, on the one hand ; and the non-existence of unicorns and of squared-circles because none of them exists. Therefore Dignāga considered this type, i. e. (PaH). (SeH). (SeH). (VeH), as inconclusive in the sense of 'being too narrow'.

From the above consideration we can conclude by pointing out that 'inconclusive' 'being too narrow' contains two factors :

$\sim$(EX) (gx.hx) ($x \neq y$) and $\sim$(EX) (gx.$\sim$hx).

Neither of them can yield a universal affirmative conclusion with existential import. One can also say that they can yield both a universal affirmative and universal negative conclusion without existential import simultaneously. Thus this is called inconclusive. In other words, we can say that when both an affirmative and negative conclusion (without existential import) can be inferred, it is called 'inconclusive because of being too narrow', i.e. the class of *hetu* either can cover the class denoted by the *pakṣa* (=minor term) only or cannot even cover it.

Here I would like to show that Uddyotakara provides another combination of inconclusive syllogism, viz. (PaH). (SeH). (VyH), which can be included in Dignāga's combination, i. e. (PaH). (SeH). (VeH). In Uddyotakara's treatment we find one portion which is different from Dignāga's combination, i.e. (Vyh),

In Uddyotakara's treatment of *Hetucakra* we find that he adds the term '*avidyamāna*'. Thus from the addition of the term '*avidyamāna*' we have now two more varieties.
These are :[1]

10. *Avidyamānasapakṣa* (='avaidyamānasajātīya')

1. ibid. p. 46.

(SyH)=~(EX) (~fx.hx)=~(EX) (~fx hx.gx). ~(EX) (~fx.hx. ~gx).

11. *Avidyamānavipakṣa* (VyH)=~(EX)(~hx)=~(FX) (~hx.gx) ~(EX) (~hx.~gx)

Now we can say that Uddyotakara's new combination runs as follows (6) *Sādhyavyāpaka* (PaH)=~(EX) (fx.~gx). (Ex) (fx.gx); *Sapakṣāvṛtti* (SeH)=Ex) (~fx.hx.~gx).~(Ex) (~fx.hx. gx); and *Avidyamānavipakṣa* (VyH)l (Ex) (hx)=~(Ex) (~hx.gx). ~(Ex) (~hx.~gx).

Like Dignāga's combination (PaH). (SeH). (VeH), this combination is inconclusive because it is 'too narrow'.

(7) *Sādhyavyāpaka* (PaH ; *Avidyamānasapakṣa* (SyH). *Avidyamānavipakṣa* (VyH) In symbolic language this combination can be written as follows :

~(Ex) (fx.~gx). (Ex) (fx.gx).~(Ex) (~fx.hx. gx) ~(Ex.) (~fx.hx ~gx)~(Ex) (~hx gx).~(Ex) (~hx.~gx)

This type may be demonstrated as follows :

~E(f.~g). E(f g.),~E(~f.h.g).~E(~f.h ~g) ~E(h.g).
~E (~h~g)...(i)

Like the type (5), (i) implies~E(~f.h.g) and ~E(~f.~h g). Therefore this type is inconclusive because of being too narrow. But this type is a difficult one, because an illustrative such that all regions (g.h), (g~h), (~g.h) and (~g.~h) are empty is not as handy as those of the other types.

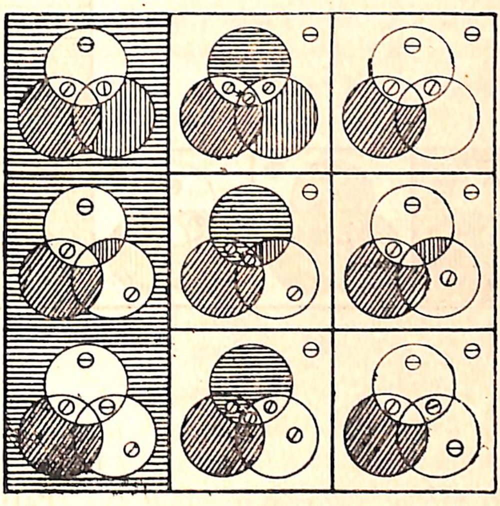
If we translate Uddyotakara's illustrative case into a three-membered syllogism in the from of U (f⊃g).
U(g⊃h)⊃U(f⊃h). we have :
"Everything is knowable (minor premiss)
Every knowable is nameable (major premiss)
Therefore everything is nameable (conclusion)."

Being aware of the difficulty of this type, Uddyotakara managed to find out a case in which both *sapakṣa* and *vipakṣa* are empty. The subject 'everything' is exhaustive : its complement is empty. The *sapakṣa*, by definition, does not include the subject, therefore, it is empty. The *vipakṣa* is empty, because nothing is not nameable.

At a *prima-facie* observation, his case seems to be quite plausible. This is one more typical example of Uddyotakara's ingenuity, if it can be called so at all. If, however, we examine it carefully, we find the following faults :

Before discussing the fault, here, I would like to draw Venn's diagram[1] :

Dignāg's nine types of syllogism can be expressed in Venn's diagrams as follows :

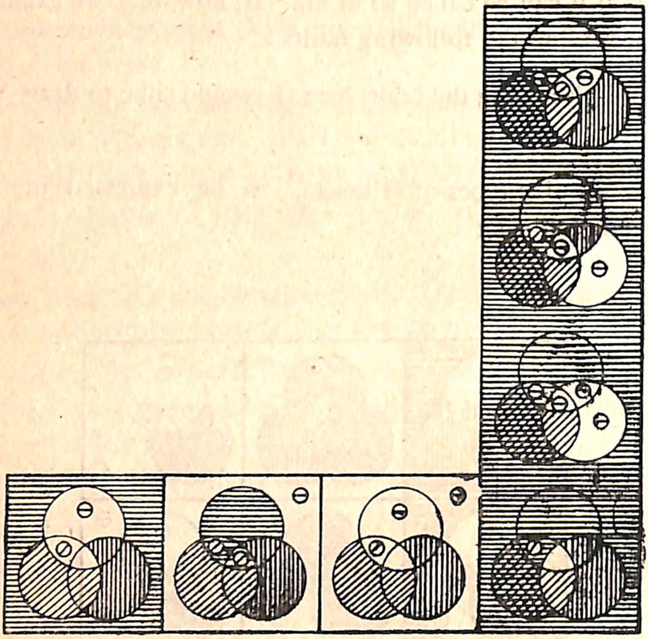


The order :

(PaH). (SaH). (VaH) (PaH). (SaH). (VeH) (PaH). (SaH).(VuH)
(PaH). (SeH). (VaA) (PaH). (SeH). (VeH) (PaH). (SeH). (VuH)
(PaH). (SuH). (VaH) (PaH). (SuH). (VeH) (PaH). (SuH). (VuH)

1. ibid. p. 50.

Uddyotakara's :



The order :

(PaH).(SaH).(VyH)
(PaH).(SeH).(VyH)
(PaH).(SaH).(VyH)
(PaH) (SyH). (VaH) ; (PaH). (SyH). (VeH) ; (PaH) (SyH) (VuH)
(PaH). (SyH). (VyH)

(1) In the diagram, the region (∼f.gh) is shaded simply because the complement off is empty, i.e. ∼E(∼f). It is not the case that the region (g.h) is empty, i.e. E (g.h), which is actually demanded in this type. If the subject of the minor premiss is not 'everything' but 'a pot', the syllogism will be :

A pot is knowable. (minor premiss)
Every knowable thing is nameable, (major premiss)
Therefore a pot is nameable. (conclusion);

Then the region (~f.g.h) will not be empty, and this case will belong to Uddyotakara's combination (PaH). (SaH). (VyH) and not to (PaH) (SyH). (VyH).

Perhaps he had forgotten one thing, that the scheme of the *hetucakra* was designed to represent the variety, which should be complete and non-overlapping, of the *major premiss*. The major premiss of his illustrative case, i e. (PaH). (SyH). (VuH) actually belongs to (PaH) (SaH) (VyH) which is considered by Uddyotakara as valid. This is overlapping. The major premiss representing the empty universe lacks an illustrative case ; this is incomplete.

(2) Uddyotakara used 'everything' as the subject of the minor premiss, as if he tried to formulate this syllogism as $U(t \supset k)$. $Uk \supset n) \supset U(t \supset n)$, where t = thing. K = Knowable and n = nameable. The 'everything' can certainly be the grammatical subject of a sentence. but its function in logic is a quantifier 'for every x, — —' rather than a logical subject of a proposition. The formula of his illustrative case is no more a syllogism, but something like $UK'U(K \supset n) \supset Un$.

It is most unsuitable to put such a formula in the list of the *hetucakra*, because it is something totally different from others, like 'a camel emerges from a group of sheep' in a Chinese proverb.

(3) The premiss '*avidyamānavipakṣa*' (VyH) *i.e. vipakṣa*-non existent) in this case is 'nothing is not nameable'. By a mere immediate inference of 'observation' it can be changed into 'everything is nameable', which is exactly the required conclusion, without the necessity of adding any other premiss. We can say that his premiss *avidyamānavipakṣa* is faulty on account of *petitio principii* or his syllogism is pointless.

From the above consideration we can conclude that Uddyotakara's illustrative case for the type (SaH). (SyH). (VyH) is a wrong one and cannot represent the formula '*pakṣavyāpaka—avidyamānasapakṣa—avidyamānavipakṣa*'

In short, we can say that Dharmakīrti restricted the number upto two only viz. 'being too broad' and 'being too narrow'. The reason behind this reduction is that the combined—*sādhāraṇa*, *sapakṣaikadeśavṛtti*, *vipakṣavyāpi*, *vipakṣaika-deśavṛtti*, *sapakṣavyāpi ubhaya-pakṣaikadeśavṛtti*—into one, viz. 'being too broad', all the four infringe the same rule, viz. the third clause of the *Trairūpya*,

by the existenee of a counter-example. The difference existing among them is entirely irrelevant to their being fallacious : Killing a man by the right hand and doing so by the left hand are equally condemned as committing a murder. In the list of fallacies, it is the rule of the *Trairūpya*, and not that of *Hetucakra*, that matters Therefore, there is no reason why they should be put in different types and Dharmakīrti's modification is undoubtedly an improvement.

Further, the fallacy 'being counter-balanced' was deleted by Dharmakīrti, because "when the argument is founded on the observation of facts, there is no room for contradiction."[1]

Furthermore, to say that the arguments in the group of 'being too narrow' are inconclusive does not mean that a conclusion cannot be inferred. No one can refute the validity of formule $(p \supset q).(\sim q) \supset (p \supset r)$. The trouble is, a conclusion $(p \ni q).(\sim q)\ (p \supset \sim r)$ can also be inferred. The effect which we require to draw from the syllogism is cancelled by two conclusions which are contradictory to each other.

The formulae[2] : (1) (qDr) implies both (q r) and (q r) ; (2) U (gDh) implies both U $(g \supset h)$ and U $(g \supset \sim h)$; (3) q.(qDr) implies both r and $\sim r$; (4) $(p \supset q)$ (qDr) implies both $(p \supset r)$ and $(p \supset \sim r)$; and (5) U $(f \supset g)$. U(gDh) implies both U $(f \supset h)$ and U$(f \supset \sim h)$—very much resemble the *exfalso sequitur quodlibet*, which is sometimes called the second paradoxial law; but the formulae of 'being too narrow' is an extension of it. Hence whatever it may be if the argument is based on this form, then the inference which is based on that type of argument is incorrect (*i,e.* not unique).

IV

GAṄGEŚA'S VIEW

Let us focus our attention towards Gaṅgeśa's definition of *savyabhicāra* and its classification. He says nothing new, but for the historical interest I would like to mention it. He holds that *savyabhicāra* is a reason (*hetu*) or middle term in which abides a character, the possession of which causes that presence of two

1. NB. p. 115 ; BL. Vol. 2, pp. 224-25.
2. 'D' is used for theorem which is common to both.

alternatives which produces doubt in the *sādhya* or major term. This is what Dignāga points out that more than one conclusion leads towards doubt, and hence uncertain. The nature refers to the constant accompaniment with, or absence from, both the major term and its non-existence.

Further Gaṅgeśa divided *savyabhicāra-hetu* into (1) 'being too general', (*sādhāraṇa*) (2) 'being too narrow' (*asādhāraṇa*) and (3) 'being non-exclusive' (*anupasaṃhārī*). The first two are not new for us because I already gave much attention in discussing Dignāga-Uddyotakara-Dharmakīrti's concept of *anaikāntika* (=*savyabhicāra*).

Let us now see Gaṅgeśa's classification of 'being non-exclusive' wheter this classification merges into our formalization or not. Gaṅgeśa defines[1] it as "a *hetu* is said to be non-exclusive, if it is destitute of example of this type of inconclusive *hetu*, viz. all things are impermanent because they are knowable."[2]

Let us classify this example : 'for all X, whatever X may be, if X is a thing, X is an impermanent thing', Why X is an impermanent thing? He further provides that 'X is knowable'. Here Gaṅgeśa claims that we cannot cite any example in the form of All' (*i e.* (x)). Thus his form would be : (x) (Tx⊃Ix) (Tx⊃Kx).
Here Tx=things, Ix=impermanent, and Kx=Knowable.
From this form we cannot hold that (x) (Ix⊃Kx).

Further, he points out that if we try to make in (x) form, we fall into fallacy. This implies that Gaṅgeśa form would be as fallows : (PaH).(SyH`.(VyH); *sādhyavyāpaka+avidyamānasapakṣa +avidyamānavipakṣa*. This is what Uddyotakara combination is. This combination, as I already proved, can merge into Buddhist's combination, *i.e.* (PaH).(SeH) (VeH).

In short we can say : The fallacy of erratic reason (*savyabhicāra*) is of two forms viz. 'being too broad' and 'being too narrow'; but Nyāya thinkers add one form *i.e.* 'being non-exclusive. The last form can be merged into the form of 'being too narrow'.

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1. H.I.L. p. 439.
2. ibid. p. 440.

CHAPTER IV

VIRUDDHA (CONTRADICTORY) HETU

A *hetu* may be contradictory (*viruddha*) if and only if it is in contradiction to something which the proponent has already accepted or is known to hold.

I
THE NYĀYA POSITION

Gautama in his *Nyāya-sūtra*[1] defines *viruddha hetvābhāsa* as : "A certain doctrine (or view) having been accepted, the *hetu* that is contradictory to it is called the *viruddhahetvābhāsa*".

Vātsyāyana[2] makes it clear by pointing out that the term '*tadvirodhi*' (contradictory to it) means that which contradicts it, i.e. that which contradicts (sets aside, renders impossible[3]) the doctrine that has been accepted. For instance, the author of the *Yoga-bhāṣya* on the *Yoga-sūtra* I.12-13[4] makes the following statement :—"This world, being a modification, ceases from manifestation, because its eternality is denied"—and—"even when *thus ceasing*, it continues to exist, because its utter destruction is denied." In these two cases we find that the *hetu* in the former reasoning—'because its eternality is denied'—means that 'no modification can be eternal'. This is certainly contradictory to the doctrine enunciated in the second statement—'even when ceasing, the modification continues to exist'. The 'manifestation' of a thing is only the *attaining of existence*, and 'ceasing' is *falling off*. So that if the modification when *fallen off from its existence* (or from manifes-

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1. Siddhāntam abhyupetya tadvirodhī viruddhaḥ. N.S. I.2.6.
2. NBh. I.2.6.
3. In Bhāṣya on Sū. 5.2.4, "is contradicted" has been explained as "is rendered impossible".
4. The real words of the *Yogabhāṣya* are : tadetat trailokyam etc. as quoted in *Vārtika*.

tation), does 'continue to exist then, it is not possible to deny its eternality. It is due to the fact that the modification continues to exist even after the manifestation' should constitute its eternality. Again, 'denial of its *eternality*' should necessarily imply the possibility of the modification *falling off* from its existence; as it is only what actually *falls off* from existence that has been found to be non-eternal; while that which *still exists* does not *fall off* from existence. Therefore continuing to exist and 'falling off from existence' are two mutually contradictory ideas. Thus these two ideas do not go together or co-exist. Hence, it is found that the *hetu* put forward (denial of eternality) actually sets aside the very doctrine (of continuity of existence) on whose basis it is put forward.

Uddyotakara[1] points out that Gautama's definition of '*viruddha-hetvābhāsa*' can be interpreted in two ways : the *viruddha hetu* is that *hetu* which contradicts the *object* which is accepted in the proposition, i.e. that *hetu* which sets aside the object of the proposition and which is set aside by the object accepted in the proposition. With the help of this interpretation Uddyotakara claims that this fallacy covers all kinds of opposition or contradiction. But the other four fallacies of Gautama have their own specific characteristics; their respective specific characteristics distinguish them from the *viruddha hetvābhāsa*.

The second interpretation is that *viruddha-hetvābhāsa* occurs when there is contradiction or opposition between the *meanings* of two sentences, when these meanings are opposed to each other, or between the *proposition* and *hetu*.[2] Such contradiction subsists both in the proposition and the *hetu*. It may be described in terms of one or the other as the occasion demands.

Uddyotakara[3] gives the following example for *viruddha-hetvābhāsa* : (El) 'Sound is eternal, because it is a produce'. Let us consider this example in detail. In El the first part, i.e. 'sound is eternal', the proponent tries to convey that sound is eternal. If our answer is yes, then why ? again if we say no then why ? In

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1. KARL. H. POTTER—*The Encyclopedia of Indian Philosophy*, Vol. II, p. 319.
2. Pratijñā-hetvorvā virodhaḥ. NV. 1.2.6.
3. NS. 2.2.33,

the '*Nyāyasūtra*[1] Gautama argues by way of example that (E2) 'a word is a permanent entity' because it can be repeated'. But Gautama says that it is taken to be eternal "on account of the fact that the cause of its destruction is not apprehended". The destruction of whatever is non-eternal takes place on account of some cause. For instance, the destruction of a lump of earth is effected by the separation of its parts. So, if 'sound be non-eternal', then the cause owing to which its destruction takes place should be apprehended; but this is not apprehended. Therefore, 'sound is eternal'.

Further, if sound be eternal, then, this would imply the contingency that it should be heard always, since the cause of not hearing it is not apprehended. But Vātsyāyana points out that just as the non-apprehension of that which destroys a sound may lead to the contingency that a sound is eternal, similarly the non-apprehension of the cause of its not being heard (supposing that sound is eternal) may lead to the contingency of its being heard at all times. If the opponent would still urge that sound (in spite of its eternality) is not heard always, because that which is to be manifest is not always present, we would remark that we have already rejected the hypothesis that there may possibly be such a manifestating agent at all. If, however, the opponent holds that an existing sound can remain unheard without any cause, we would say that the *cessation* of a sound, which was at one time non-existent (and then came into existence), also may take place without any cause. Both the views (i) that a sound may be destroyed without any cause and (ii) that a sound may remain unheard without any cause equally go against what is actually observed to be the case.

If, again, it (i.e. the cause of the *cessation* of a sound) is cognised (say by inference), then its non-apprehension would not be a fact, and hence the reason adduced by the opponent, viz., the said non-apprehension, would be defective for proving the indestructibility of a sound.[2]

If the cause of the *cessation* of a sound is apprehended by

1. ibid.
2. NS. 2.2.35.

inference, then, since there would be the non-existence of its non-apprehension, therefore, the mark cited by the opponent would be as defective as the mark of the argument, "since it possesses horns, therefore, it is horny."[1] Here one may ask : what is that argument which can prove that there is a cause of the *cessation* of a sound ? The answer would be, "for the intelligibility, of a series of sounds, it is necessary to recognise that there is such a cause". That there is a series of succeeding sounds has already been made out—from a sound which is produced by conjunction and disjunction (for, instance, a drum and a drum-stick), another sound is produced. From this, still another and so on. In such series, the sound which is produced destroys the sound which produced it. But contact with some obstructing substance (e.g. a wall) puts an end to the last sound of such a series; for it is observed that when a wall acts as a barrier, even a person who is very near a sound does not hear it, while, if there is no such barrier, even a person who is at some distance from the sound hears it. Moreover, when a bell is rung we uninterruptedly hear, by different acts of auditor's perception, a series of sound which are loud or low in varying degrees. That being the case, if we consider a sound to be eternal, it would be necessary to grant that there is, either in bell or elsewhere, some cause which from time to time manifests this eternal sound, no matter whether the said cause be a persistent entity or be a short-lived member of a series of similar other short-lived members which come and go, one after another; i.e we should be able to indicate what is the cause of the said series of auditory perceptions. If, however, a sound is considered to be non-eternal, the facts stated above can be accounted for. We should infer that in the bell there must be some additional cause which co-operates with conjunction in producing a sound which the bell *emits*, a cause which is like a *saṁskāra* (trace). For *saṁskāra* is of three kinds : (i) *bhāvanā* or mnemic, (ii) *vega* or impulse which enables a body to move when one unit of its motion is over – it is caused in that body by such a unit of motion as it ceases, (iii) *sthiti-sthāpaka* or the tendency of a thing to regain its original condition, after this condition is changed. If sound is a member of series of such other successive trace-like things having various degrees of strength or weakness

1. VS. 3.1.16.

on account of continuity, as already pointed out, of a series of successive sounds, then the strength or weakness of a sound of this series is due to the strength or weakness of the corresponding trace-like thing; and this brings about the variety of the many auditory perceptions in question.

But the trace which is an additional cause of a sound is not capable of being known by any means whatsoever. Again, on account of such lack of knowledge about it, we must say that it does not exist. Gautama points out that since there is the *cessation* of a sound when the sound-emitting substance is pressed hard with one's hand, hence there is no lack of its knowledge.

Now, we can say that by a peculiar activity of the hand, a ball can be pressed hard. When this takes place, no more successive sounds come into existence in a series. That is why there can no longer be any auditory perception of any sound (proceeding out of the bell).

In such a case it is inferred that the conjunction of the bell with an obstructing substance puts an end to the additional cause of a sound—a cause which we have described as similar to a trace. Again, on account of the *cessation* of this trace-like thing the sounds which ordinarily follow one after another in a series do not originate; and owing to their non-origination, the acts of auditory perception stops. This is similar to what occurs to a flying arrow : when owing to the conjunction of an obstructing substance (with the flying arrow) the trace (called *vega* or impulse) "which is a cause of its motion, is effected, the flight of the arrow is terminated." Again, there is also the cessation of the series of its throbs (these throbs of the moving arrow are the smallest units of its motion). Every such throb is of an extremely short duration. But as it vanishes, it leaves behind, in the moving object, a trace or impulse which causes the next unit of motion, which too, leaves a similar trace behind, and so on. Motion, therefore, for Nyāya, would seem to be a *staccoto* sort of process in which there is no continuity of motion, all through. So, the act of pressing a sounding pewter vessel and such other sounding objects with our hands, can serve as a valid mark for inferring the existence of a series of successive traces, which we have suggested

to be the additional causes of sounds. Therefore it is not true that there is no valid means of knowing the additional cause of a sound which we have described as a tracelike thing.

Further, if a thing be considered to be eternal simply because of its *cessation* is not known, then, it would lead to the undesirable consequence of the eternality of those which are said to constitute the manifestion of an eternal sound.[1]

Coming to our original fact, I should like to mention that in E2 (p. 100) we have said that "Sound is eternal because it is a product". Already much attention has been given to pointing out the eternality of sound and so it need not be further elaborated. Now we are in a position to say that the proposition of E2 contradicts the *hetu*. The reason is that whatsoever is a product leads us to accept the non-eternality of sound. But in E2 our proposition being sound is eternal, it can't be held to be a product. That is why Uddyotakara points out that the *hetu* contradicts the hypothesis.

To sum up Uddyotakara's view: In the reasoning E2, the property of being a product is admitted by both the parties as subsisting in sound and it is also confirmed by perception. Another reasoning where the *hetu* contradicts the proposition is: (E3) 'no single entity exists (proposition), because the word "entity" (*bhāva*) refers to an aggregate (*samūha*) of existents' (*hetu*). In this reasoning the word 'aggregate' stands for a single entity and thus the *hetu* contradicts the proposition. The example of a reasoning where there is contradiction between the proposition and the *hetu* is: (E4) substance is different from quality, because no such thing different from quality is apprehended.[2]

II

THE BUDDHIST POSITION

On the other hand Dignāga[3] points out that *viruddha hetvābhāsa* occurs only when the *hetu* is presented as invariably concomitant, not with its natural consequence, but with the inverted consequence

1. NS. 2.2.37.
2. NV. 1.2.6.
3. B.L. Vol. 1, p. 330.

with the contradictorily opposed part to the natural consequence. Its importance is chiefly theoretical as showing the maximum of inconsistency with a logical reason may occur. In practice its occurrence in an unconcealed, pure, form is hardly possible. The natural 'base of human kind' for truth and consistency will too strongly revolt against such a reason (*hetu*). But when concealed behind an uncertain, unclear or insufficiently digested terminology, it happens frequently that this fallacy is found at the bottom of some spacious argumentation. The difference between (1) 'no S and all D', on the one hand, and (2) 'no S and some D' on the other, (here the signs 'S' and 'D' represent 'similar' and 'dissimilar' respectively) is that in the first, the *hetu* is present in all dissimilar cases and in the second it covers only one part of that forbidden domain. There common feature is the total absence of the *hetu* in similar cases, where it ought to have been necessarily present. Such a contrary (*Viruddha*) *hetu* is found whenever a philosopher produces an argument which, on analysis, is found to run against the fundamental principles admitted by himself. This is what the Naiyāyikas also accepted.

Consider these two arguments :

(E5) : "The sounds of the *Veda* are eternal entities; because they are produced by causes. Whatsoever is a product is an entity, like space."

(E6) : "The sounds of the *Veda* are eternal entities, because they are produced at will. Whatsoever is produced by human will is an eternal entity."

The reverse of (E5) the expressed concomitance is true. Therefore the reason adduced is a reason to the contrary. It occupies the position, what Dignāga held, like this ; 'no S and a.l D', since it is absent in all similar cases, i.e., eternal objects, like jars etc.

But in (E6) eternal objects are found to be absent in all similar instances. But (E6) is different from (E5); the difference is that while in (E6) *hetu* is present not in the whole forbidden domain of the dissimilar instances, in (E5) it is present only in some non-eternal things, like jars, etc. Therefore in (E6) it is absent in another part of the dissimilar objects, like lightning etc.

An example of a concealed contrary *hetu* is the following one.[1] The Sāṅkhya philosopher wishes to establish that the sense-organs are of somebody, viz., the organs of the soul. The soul is a simple substance, the sense-organs are composite physical bodies. He, therefore, establishes the general principle, that the composite exists for the sake of the simple, *ergo* the sense-organs exist for the sake of the soul. The real character of this argument is concealed by the ambiguity of the term "to exist for the sake" of somebody. But, as a matter of fact to exist for the sake of somebody means to affect him either directly or indirectly. And to affect him means to produce a change in him. But a change can be produced only in a composite substance, a simple substance cannot change. Thus it is that the argument of Sāṅkhya that the sense-organs exist for the sake of the soul runs against their fundamental principle that the soul is a simple non-composite, unchanging substance.

This variety of a concealed contrary (*viruddha*) reason (*hetu*) is of no frequent occurrence in philosophy. Nyāya establishes it as a special fallacy. Dignāga admits it as a variety of his *viruddha-hetu*, but Dharmakīrti refuses to consider it (i.e. concealed contrary *hetu*) as a special variety. He maintains that it is included in the two varieties of the contrary reason (*viruddha hetvābhāsa*) as established by Dignāga.

We find that Dignāga classified *viruddha hetvābhāsa* as :

1. *Contradiction expressed-predicate* (*Dharmasvarūpaviparītasādhana*)—He provides the following example :

   A *śabdotapattivādin* says : "Sound is permanent because it is a produce."

   A *śabdābhivyaktivādin* says : "sound is permanent because it is a product of effort."

2. *Contradiction implied-predicate* (*Dharmaviśeṣavīparitasādhana*): He illustrates it as : "A Saṁkhya against a Buddhist : "The eyes are serviceable to another one's needs, because they are composite substances, like a bed."

1. NB. and N.B.T., p. 63 13: transl. p. 175.

3. *Contradicting expressed-subject* (*Dharmisvarūpaviparītasādhana*) : Kaṇāda says to pañcaśikha : 'Being is neither substance, nor quality, nor action ; because it possesses substance, quality and action, like particularity."

4. *Contradicting implied-subject* (*Dharmiviśeṣa-viparīta-sādhana* : The illustrative case is the same as we have in contradicting expressed-subject.

Fallacies of implied-predicate and implied-subject concern not only the truth of the premises but also the ambiguity of terms as well. If all the terms are precisely and uniquely defined, these two fallacies will be the same as the expressed-predicate and expressed-subject respectively. On the other hand, if the apparent meaning and implied meaning of a term should be discriminated in the list of fallacies, the fault should be extended to other fallacies as well. Why should they be confined to these two only ?

According to the verbal meaning of the terms *dharmisvarūpa-vipārītasādhana* and *dharmiviśeṣaviparīta-sādhana,* these two fallacies should be related to the minor premise and can be interpreted in two possible ways, viz. ;

(a) that the negation of the minor premise is true, or

(b) that the minor premise can yield a conclusion which is contradictory to *sādhya*. If the first interpretation is correct, these two fallacies should become a special case of the *a-siddha,* but this is most unlikely the case. Again, in the second interpretation, if the contradictory *hetu* is defined as a *hetu* which can yield a conclusion which is contradictory to the *sādhya,* then the fallacies of implied-predicate and implied-subject should not be called contradictory (*viruddha*), because no conclusion can be derived at all ; the following formula is false :

$[(p \supset \sim q).\ (q \supset r)] \supset (p \supset \sim r)$. Therefore we can delete these two fallacies i.e. (1) expressed-subject and (2) implied-subject ; so we have only two varieties of *viruddha,* i.e. (1) expressed-predicate and (2) implied-predicate.

Dharmakīrti points out that (2) implied contradiction is included in (1) expressed contradiction. He illustrates it as :

"The eyes etc., are for the use of *another*, because they are composite things like a bed, seat, etc."

In this argument the term another is ambiguous, inasmuch as it may signify either composite thing (e.g. the body) or a non-composite thing (e.g. soul). There would be a contradiction between the *hetu* and *sādhya* if the word another were used by the speaker in the sense of a non-composite thing, but understood by the listener in the sense of a composite thing. The reasoning would then involve contradiction of *hetu* to the desired or implied *sādhya*.

Now consider Vidyābhūṣan's interpretation of Dharmakīrti's fallacy, i.e. being contradictory is utterly incomprehensible. He says[1] :

"Sound is 'eternal' because it is a product : (Here product is not homogeneous with 'eternal', i.e. the *hetu* (middle term) is opposed to the *sādhya* (major term).

Sound is eternal, because it is a product. (Here product is not heterogeneous from 'non-eternal')."

In this case, however, I am very much in doubt whether the great Pandit himself could understand what he was writing.

According to the *Nyąya Bindu*[2] : "When the reverse of the two aspects of the *hetu* is true, the fallacy is *viruddha.* What are the two aspects ? Its presenee in similar and absence in dissimilar instances, e.g. the property of being product, or that of being produced by effort, becomes a contradictory reason *viruddha-hetu*), if the permanence of sound is to be deduced from it."

Vīdyābhūṣana's formulation should be written as follows : "Sound is eternal because it is a product. (Here the property of being a product is absent from the property of being eternal, but it is wholly present in the property of being non-eternal. As I already pointed out)." "Sound is eternal, because it is a product of effort, is absent from the property of being eternal, but it is partially present in the property of being non-eternal."

1. H.I.L. p. 313.
2. ibid.

Thus Dharmakīrti's definition of *viruddha* runs as follows : The contradictory appears in the *sādhya* but not in the minor premise. This is justified because if the minor premise is a negative proposition, it cannot derive a contradictory conclusion and therefore should not be called *viruddha*. In this way Uddyotakara's second interpretation is refuted by Dharmakīrti.

Now let us consider Dharmakīrti's double aspect of opposition (*viruddha*). What is this double aspect of opposition ?

(1) *Efficient Opposition of Incompatibility* : Efficient opposition occurs only when "one fact has duration as long as the sum-total of its causes remains unimpaired, and then vanishes as soon as another fact appears."[1] This implies that both are incompatible, just as the sensations of heat and cold.

(2) *Logical Opposition* : "There is also opposition between two facts when their own essence consists in mutual exclusion, and between the affirmation and negation."[2]

Let us consider these two oppositions one by one :

Possessing unimpaired causes means having the totality of its causes present. If something owing to deficient causes ceases to exist, it cannot be efficiently opposed by something else, "because of the non-existence, in case another exists, of a lasting possessor of non-deficient causes, there is a conception of opposition. "Of a possessor of non-deficient causes"—thus that one is called whose causes are non-deficient, i.e. are intact. Of whom there is non-existence, through deficiency of causes, to him there is no opposition even from whatsoever." This idea is carried by the expression 'unimpaired causes.'

But is it not evident that as long as the totality of the causes of something remains intact, nothing in the world will be able to interfere with it. How can it then be efficiently opposed by anything else ?

This is 'however' possible in the following way. Let the sum total of its causes be present, the fact is nevertheless efficiently

1. BL. Vol. II, p. 187.
2. ibid. p. 192.

opposed by that other fact which, producing a breach in this totality, thus removes it.[1] If a fact is opposed to another one in this sense, it always effects it in some way or other. Indeed, opposed (*viruddha*) is the abolisher (*nivartaka*) of cold-sensation which counter-acts the force producing cold-sensation, although being himself a producer of cold-sensation. Therefore opposed is just the producer of the disappearing phenomenon (*nivartyatva*) which makes a deficiency of causes. The idea seems to be that when cold is superseded by heat there is a struggle between two forces. Three phases, or moments, of this struggle must be distinguished. Heat is latent in the first phase, although it latently counteracts already the forces producing cold, so that in the next phase cold will appear in a final moment, in order to be superseded in the third phase by heat. Thus it is that in the first phase cold is in a state of latently efficient opposition with the forces which will produce heat in the ultimate phase. Dharmakīrti, thus maintains that the causes which produce cold in the next moment, will produce heat in the next following moment. That heat is the cause of cold means that heat is present among the causes which produce the last moment of cold. Therefore who of whom is the remover, he removes him, at the utmost, in the third moment. Coinciding in the first moment he is fit to produce a condition of non-efficiency. In the second he makes the opposed inefficient. In the third when the inefficient has disappeared, he occupies its place.[2]

If this is right, then light, which represents a moving substance, occupies space spreading gradually by light waves. When it produces the moment of light which follows immediately upon darkness, begins by producing in the neighbouring darkness a condition of non-efficiency. That darkness alone becomes non-efficient which is contiguous with the light, (first moment). When the non-efficient has been removed, (second moment), light springs up in the same place, (third moment). In this manner darkness

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1. N.M.
2. "asamarthā cāsāvavasthā ca kṣaṇāntara-jananaśākti— (va) hitetyarthaḥ, tasyā ādhāna-kṣaṇam, tatra yogyo bhavati"— Mallavādi, fol. 95.

can be gradually driven away by light. In the same way a hot sensation can be superseded by a cold one.

But when light is produced just there, in the place of darkness, then, from which moment of the light of the darkness-place is being produced, just from that moment the darkness which is not capable of producing other darkness has been produced. Therefore just the production of an inefficient condition means doing it away. And therefore in which moment is the birth-producer, in the third moment from it the opposed is stoped, if it is stopped quickly. And since there is relation of producer to produced the opposition is of two series, not of two moments. This however could not be an efficient opposition. since causal efficiency belongs to moments only and not to artificial integrations of these moments into series ? True, but although the serial existences are not realities, their members, the moments, are the reality. Therefore the core of the problem (*paramārtha*) is the following fact. There is no incompatibility among moments, but among two series consisting of many moments. Indeed as long as the moments of heat are present, the moments of cold, although being active forces, are kept down in a state of suppression.

Efficient opposition is thus marked off by an antagonism between two phenomena having duration. All atoms, on the other hand, possess mere difference, any pair of them cannot occupy the same place, but there is no efficient opposition between them, because the duration of one atom does not interfere with the duration of another one.

In order to indicate that this kind of opposition concerns only serial existences and is brought about by producing a breach in the causes of a lasting phenomenon, it has been stated, that the opposed facts have duration. Duration means lasting for sometime without interruption. Such a series of moments of cold vanishes when a series of moments of heat appears.

There are some philosophers who maintain that the relation of efficient opposition is not a reality. To them, Dharmakīrti gave answer as follows : "When an effect is produced, we do not really experience causation itself as a sensible fact. But the existence of a (real) effect presupposes the former existence of a

(real) cause, therefore indirectly the relation is necessarily a real one."

Similarly when something real has been removed, we can have no direct sense-experience of opposition itself. But when a cold sensation is not followed by any further such sensation, we know that this is caused by (real) heat. Efficient opposition is thus as much a reality as the relation of cause and effect.

(2) *Logical Contradiction* : Mutual exclusion means complete separation, diametrical opposition, without anything intermediate. If two facts have the essence, or possess the nature, consisting in such mutual exclusion, they have their stand in mutual contradiction.

When something on earth[1] is definitely cognised, something else is always at the same time excluded, the essence of the distinctly cognised has its stand on a contrast with the excluded. When a patch of blue is being definitely cognised, its non-identity (non-blue) is *eo ipso* excluded This means that if A is A, it excludes A is non-A or, in other words, that the law of identity is the counterpart of the law of contradiction expresses the impossibility of contradiction between subject and predicate of the same analytical judgement. If it were not excluded we would have no cognition of blue ; i.e. if the judgment "this is non blue/were not excluded we would not have the judgment "this is blue". Therefore being and non-being of a real object possess an essence (*rūpa-svārūpa*) having its stand on mutual exclusion. Since the terms *vastu, vidhi, bhāva* are used as synonyms. or "by the fact (*-taya*) of having (*bahuvr*) an essence which has its stand on mutual exclusion, as existence and non existence (affirmation and negation)." Thus the sentence means that reality and unreality affirmation and negation, existence and non-existence are correlative ; i.e. the one is nothing but the negation of the other.

Further a thing[2] which is merely "other than blue cannot

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1. iheti jagati, cp. Mallavādi, f. 97.
2. Lit. "a form", rūpam.

avoid being included in the negation of blue.[1] When we perceive a yellow or some other colour (that is not blue), we *eo ipso* do not perceive any blue. We then imagine its presence (in a positive judgment) and we ascertain its absence (in a negative judgment). This is so, because[2] just as the blue excludes its own negation, so also does the yellow and any other colour exclude the negation of its own self. Thus it is that there is a direct contradiction between affirmation and negation, and contradiction between any pair of different objects, inasmuch as they unavoidably include in the one the negation of the other.

But what is it that we can conceive as non-existent in something else? Something distinct. Not something unlimited, as e.g., the fact of being a point-instant. An extreme concrete and particular (*svalakṣaṇa*), or a point-instant (*kṣaṇa*), is other with regard to everything in the whole universe (*trailokya-vyāvṛtta*), it includes no coordination (*sārūpya*), it is something unlimited (*aniyatā-kāra*) A patch of blue, as including already coordination with other colours and duration through a series of moments (*santāna*), may be characterised as a mental construction (*vikalpa*) under the law of contradiction, but if non-blue is interpreted as including everything in the universe except this blue, the representation and the judgment will be infinite and senseless. So we can say that "A is not B may always be taken to be=A is X", x is *aniyatākāra*. By Dharmakīrti the non-blue is here characterized not as an X, not as including all the point-instants of the universe, but as the fact of the absence of a representable blue on a substratum on which it could have been present and on which its presence can be imagined. The term *niyatākāra* means here exactly the reverse of what is designated by the term *niyatapratibhāsa*, although *ākāra* and *ābhāsa* (=*pratibhāsa*) are quoted as synonyms.[3] We find that the term *aniyata* applies to an object not restricted to a present moment. Thus *niyatākāra* corresponds

1. Mallavadi f. 97, introduces this sentence thus—yady evam nīlaṁ svābhāvam eva pariharati, na nīlābhāvavat-pītādikam ityāha nīlyādi.
2. co hetvarthaḥ Mallav. f, 97.
3. N.K. p. 184.16.

to *aniyata-pratibhāsa*. The term *nīrūpābhāva* which is also used as a characteristic of the excluded counterpart of an idea must be interpreted so that it should not conflict with *niyatākāra-abhāva*.[1]

Here evidently Dharmakīrti hits upon the problem of an infinite or unlimited judgment. The judgment this is non-blue will be according to Aristotle, Kant, etc. infinite. According to Sigwart,[2] the predicate alone is infinite, but the judgment is affirmative. But this is denied by Wundt. Again, according to Sigwart, the law of contradiction obtains only between the pair of judgments this is blue and this is not-blue, the first is affirmative, the second negative This confusion is found only in European logic but the position of the Buddhist logician in this regard is quite clear. The judgments "this is not blue" and "this is non-blue" are both negative, they refer to the same fact. As every negation, they express not something unlimited, an (*abhāva-mātra=aniyata ākāra*), but only the repudiation of a thing whose presence has been imagined (*dṛśyānupalabdhi*).

Therefore this contradiction is a contradiction of identity. If two facts have their stand upon mutual exclusion, they cannot be identical. This contradiction is, therefore, called *essential* contradiction.[3] which means that it serves to establish the essence, or the nature, of all entities. By dint of this law of contradiction the essence of every reality is established as something other. "So the definite form possessing the non-existence of that, it is also excluded as representable. Therefore, just as one's own non-existence, the possessors of non-existence are likewise excluded. Thus the possessor of an essence which has its stand on mutual exclusion is all by this denied to be identical."[4]

On this basis the Buddhists have established : (1) A general law of contradiction which has two aspects—(a) what can be termed its identity-aspect according to which every thing and every idea excludes its own non-existence, and (b) its difference aspect

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1. abhāvo hi nīrūpo yādṛśo vikalpena darśitaḥ CP. Jayanta, op. cit., p. 52.3.
2. Lotze. Logik. pp. 61-62.
3. NM Jayanta, p. 33.20.
4. BL Vol. II, p. 197.

according to which every thing and every idea has its own character different from others. (2) Besides this, the Buddhists have their law of otherness (*viruddha-dharma-saṁsarga*) according to which every variation of place, time and quality makes the object "another" object—this law reduces everything to point instants and cancels individual identity altogether. (3) Among the "different" real objects there are some that are antagonistic inasmuch as the duration of the one is *repugnant* to the duration of the other (*sahānavasthāna*). (4) Among the non-repugnant attributes, there are some that are coinherent, belong to the same object, they are declared to be existentially identical, (*tādātmya*), e.g. a tree and an oak. The contrary opposition which is assumed in some European logics between the extreme members of a series, as between white and black, and the contradiction between general and particular judgments, is not taken notice of in Buddhist logic.[1]

III
A FORMAL ANALYSIS

Now coming back to Dignāga's *hetucakra* in which we find two types of contradictions, the first combination is :[2] *Sādhya-vyāpaka, sapakṣāvṛtti* and *vipakṣavyāpaka* ; and the second combination is : *Sādhya-vyāpaka, Sapakṣāvṛtti* and *vipakṣaika-deśavṛtti*. In other words, first combination is that (PaH). (SeH). (VaH), and the second is,[3] (PaH). (SeH). (VuH). Here a, e, and u stand for pervasive presence, absence and partial presence respectively ; S, P, V and H be the term variables i.e. S=*Sapakṣa* P=*Pakṣa*, V=*Vipakṣa* and H=*Hetu*.

Let us define, *First*, (PaH), (SeH), (VaH) and (VuH) one by one. $(PaH) = df. \sim (EX)(fx. \sim gx). (EX)(fx. gx)$. Or $(PaH) = gy$. $(SeH) = df\ (EX)(\sim fx\ hx \sim gx). \sim (EX)(\sim fx. hx. gx)$. Or $(SeH) = (Ex)(hx. \sim gx)(X \neq Y) \simeq (EX)(hx. gx)(X \neq Y)$. $(VaH) = df, \sim (EX)(\sim hx. gx). (Ex)(\sim hx. gx)$. $(VuH) = df. (Ex)(\sim hx. \sim gx). (Ex)(\sim hx. gx)$.

1. ibid,
2. B.F.L. p. 21.
3. ibid. p. 22.

Now we combine (PaH). (SeH), (VaH)[1] = ~ E (f. ~ g). E (~f.h.~g). ~ E (~f.g.h). ~ E(~h. ~ g.). E (~ h g). (i) (i) implies ~E (~ f, g h). E (g. ~ h), (ii) The region (f. g. h) is unknown, therefore we have E(f g h) V~E(f.g.h.) (iii) combining (iii) and (i) then we have (~E(~f.g.h). E (g. ~h)). (E (f.g.h) V~E (f.g.h))(iv) (iv) implies (E (g.h.). E (g. ~h)) V (~ E(g. ~h)) —(v). (v) implies ~ U(g⊃~h). ~U(g⊃h) V U (g⊃ ~ h)—(vi).

The formule (vi) shows that if the region (f.g.h) is non-empty, the syllogism is inconclusive; if it is empty the conclusion is negative. In the latter case *contradiction* 'desired to be proved is called contradictory.'

Now let us consider the second combination i e. (PaH). (Seh). (Vuh)=~E(f.~g). E(f.g). ~E(~f.h.g.). E(~f.h.~g). E(~h.~g). E(~h.~g)—(1). Like the first combination i e. (Pah). (Seh). (VaH), (1) implies (~U (g⊃~h). ~V(g⊃h) V U(g⊃~h). It is therefore contradictory.

These two formulations, in short, can be expressed as, ~(Ex) (gx.hx) (X≠Y) and (Ex) (gx) (gx.~hx).[2]

Gaṅgeśa in essence agrees with this formulation. In the *Tattva-cintāmaṇi*[3] he points out that *viruddha* is a-*hetu* which is the counterpart of that non-existence which constantly accompanies the *sādhya.* Consider this argument: "This hill is full of fire, because it is full of water". With the help of this argument he tries to show that water is counterpart of the *non-existence of water* which constantly accompanies fire. He gives another definition of *viruddha hetu* as a *hetu* which is constantly accomapanied by the absence of the *sādhya.*

To sum up : From the point of view of formal logic, if the conclusion contradicts the *sādhya,* the fault lies on the *sādhya* and not in the syllogism.

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1. ibid p. 21.
2. ibid. p. 26.
3. H.I.L. p. 439.

CHAPTER V

ASIDDHA (UNPROVED) HETU

I
THE NYĀYA VIEW

The unproved *hetu* is that which, being still to be proved, is not different from the *sādhya*. This is the reason why Gautama[1] considered *asiddha hetu* as *sādhyasama* In other words we can say that *asiddha* is 'that *hetu* whose subsistence in the *pakṣa* is as unsettled as that of *sādhya*—says the *Nyāya-sūtra-vivaraṇa* The *Tātparyaṭīkā* has the following note on the text of the *sūtra* : The definition here provided is meant to include all the four kinds of *asiddha—svarūpāsiddha, ekadeśāsiddha. āśryāsiddha* and *anyathāsiddha*," as every one of them is still to be proved and as such similar to the *sādhya*. If the definition had been stated simply as—'the *sādhyasama hetu* is that which is unknown then, we could not include in this that *hetu* which is known to the other; while this becomes included when we add *sādhya-viśiṣṭa*, as the *sādhya* also is unknown to only one of the two parties. And if we had only the term *sādhyaviśiṣta*, then this would apply to the *anyatarāsiddha* only. As it is only this that is exactly similar to the *sādhya*,—in that both are unknown (*sādhyasama*) before proof (by one part only) and both become known after proof, and all the other kinds of *sādhyasama* would become excluded. Hence the *Sūtra* has added the term '*sādhyatvāt*' being still to be proved; the *sādhya* also is still to be proved; or else it would not be a *sādhya* at all. Hence the *hetu* is called *sādhyasama* (=unknown) because it is still to be proved; and some of the '*sādhyasama* are such as are wanting in proof only temporarily (such as *anyatarāsiddha*), while others have this want permanently, not being capable of being proved at all; and to this latter class belong the *svarūpāsiddha* and the *āśryāsiddha*. It might seem that the definition applies to

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1. NS 1.2.8.

all that is to be proved, and hence it applies to the *sādhya* also. But we should not lose sight of the fact that the definition has to be taken as subject to the general definition of *hetvābhāsa*. So what the definition means is that the *sādhyasama* (unknown) is that *hetu* which etc. etc.; and this cannot apply to the *sādhya*.

Vātsyāyana explains[1] it with the help of the following reasons: 'Shadow is a substance',—*sādhya*; to prove which is put forward the *hetu* 'because it has motion', and this *hetu* does not differ from the *sādhya*, inasmuch as it is still to be proved. Hence it is a *sādhyasama* (unknown) *hetu*. It is due to that whether shadow 'has motion' or not, is unknown, and it has got to be made known, just as much as the *sādhya*, i.e. shadow is a substance. What has got to be 'known' or ascertained is the following—'Does the shadow move, like a man ? Or is it that as the object abstracting the light moves along, there is a continuity of the obstruction, which leads to the continuity of the absence of the light, and it is this absence of light which is perceived as the shadow ?' What actually happens is that as the object moves along, it obstructs certain portions of light, and what is perceived as 'shadow' is only the continued absence 'of those portions of light' that are obstructed by the moving object; as obstruction is only negative approach.[2] Vātsyāyana gives this example because, though the Mīmāṁsakas consider shadow to be substance, the Naiyāyikas consider it to be nothing but the absence of light and the apparent movement of the shadow is only because of the movement of the object obstructing light. Uddyotakara holds, that a *hetu*, to be genuine, must itself be something already proved. Therefore when something itself unproved is used as a *hetu*, it will be a pseudo *hetu*. Such a pseudo-*hetu* is called *sādhyasama*, meaning literally 'similar', (in logical status) to the *sādhya* or the characteristic sought to be proved'. In other words the *sādhya* is something yet to be proved and if the *hetu* also is equally unproved, it has the same status as that of the *sādhya*.

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1. NBh. 128.
2. In the last sentence, the readings adopted in the body of the text are defective. The correct readings as I have already discussed are supported by the two Puri MSS also.

Varieties of asiddha=sādhyasama :

Later Naiyāyikas generally use the name *asiddha* for this pseudo *hetu* and they mention several varieties of it.

Uddyotakara : According to Uddyotakara, it has three forms viz. : (1) *Prajñāpanīyadharamasamāna* : That which is exactly similar to the property to be known by it. For example, the movement of the shadow (in the above inference) is itself an absurdity, because the motion of the shadow is as much in need of proof as its being a substance

(2) *Āśrayāsiddha* : Uddyotakara defines this as 'that whose basis is unestablished' (or having an unproved substratum (locus or *adhikaraṇa*)). For example, it may be argued that "shadow is characterised by movement, because it is perceived to occupy different spaces." This will be a case of 'having an improved substratum', because 'being perceived, as occupying different spaces' proves movement only when this characterises a substance whereas in the case of shadow the said perception does not characterise a substance because shadow as a substance remanins unproved. In other words, shadow could be regarded as moving only if it could function like a material substance, e.g. a jar; but this is not so.

(3) *Anyathāsiddha* means 'being otherwise unproved' or 'that which is otherwise established' For instance, it may be argued, ' Shadow is a substance, because it is perceived to occupy different spaces." This will be a case of 'being otherwise unproved', because shadow, though otherwise known not to be a substance, is perceived as occupying different spaces. In other words, the movement of the shadow can be explained as absence of light caused by an obstruction or a moving object. Hence it is the absence of light which constitutes the shadow.[1]

Udayana : Udayana mentions an additional variety of the *āśrayāsiddha*, called *siddhasādhana*, i.e. 'proving the well-proved'. When the subject of an inference is already well-proved as having some specific characteristic, would be a form of this pseudo-*hetu*. For instance, even after perceiving an elephant as an elephant, one infers : "It is an elephant, because it has a trunk."

1. NV 1.2.8.

According to Vaiśeṣika view as interpreted by Praśastapāda the 'unproved' (=*asiddha*) has four forms, viz.

(1) *Ubhayāsiddha* i e the *hetu* whose absence in the subject is admitted by both the contestants, e.g. sound is admitted by both the contestants, e.g. "Sound is eternal, because it is visible." Both the Mīmāṁsakas and Naiyāyikas, arguing for against the eternality of sound, admit that visibility does not belong to sound.

(2) *Anyatarāsiddha*, i.e. a *hetu* which is claimed as proved by only one of the contestants while considered as unproved by the other. The example and the result will be the same as I already pointed out.

(2) *Tadbhāvāsiddha*, i.e. a mal-observed *hetu*. For example, 'fog wrongly perceived as smoke and taken as a *hetu* for the inference of the presence of fire.

(4) *Anumeyāsiddha*. i.e. where the subject of inference is unreal. For example, "The sky lotus is fragrant, because it is a lotus." This corresponds to what is described above as *āśrayāsiddha*.

II
THE BUDDHIST VIEW

Dignāga holds that this *hetvābhāsa* takes place when the invariable connection of the *hetu* with the *sādhya* is established beyond any doubt. but the presence of the *hetu* in the *pakṣa* is either denied altogether or doubted. In other words, when the *first* aspect of the *hetu* is not realised, or the first rule of the syllogistic canon is infringed, we shall have a *hetvābhāsa* of *asiddha*.

In European logic this could be called a fallacy of the minor premise. When the presence of the reason upon the minor term is either impossible or doubtful, the conclusion will be a fallacy.

Supposing we hear the cry of a pea-cock [1] There is no doubt that this cry is the mark of its presence. And there are several caves before us among which the pea-cock is hidden, but we cannot decide in which. The conclusion, which requires certainty, is impossible. Indeed we shall have—

1. NB. & NBT. p. 64. 17 ; transl. p. 177.

"Major premise ; Wherever is a pea-cock's cry, it is present.
Minor premise : The cry probably comes from that cave.
Conclusion : The pea-cock is present probably in that cave."

The conclusion is only probable, it is not certain, and, in this sense, it is a fallacy of unreality.

Not only doubt regarding the reality underlying the inferential judgment makes the *hetu* unreal, its established unreality will a *fortiori* convert every reason referred to it into the fallacy of unreality.

Consider this syllogism,[1] *Major premise* : "A substance whose properties can be apprehended anywhere is ubiquitous, like space.". *Minor premise* "The soul is a substance whose properties can be apprehended anywhere". *Conclusion* : "The Soul is ubiquitous." In this syllogism the invariable concomitance of the *hetu* with its *sādhya* is established beyond any doubt. Again, in this case the major premise is correct, but minor premise is not so. The reasoning lacks reality, because the point of application, the point of reality to which the logical superstructure of two interdependent concepts ought to have been referred is a fantom. The soul as a separate ubiquitous substance does not exist, at least for the Buddhist. The reasoning therefore, represents a fallacy of unreality (*asiddha-hetvābhāsa*), a fallacy against the first rule of the Buddhist syllogist is canon.

Although the soul as a separate substance is, according to the Buddhist, a non-entity, and every predicate connected with the soul will be equally unreal, nevertheless it will be "unreal" only when the soul occupies the position of the minor term, the subject of the conclusion, because here is the point of contact between logic and reality. If the point of reality, the substratum or the reality underlying the whole reasoning is absent, the fallacy will be one of unreality.

From the above consideration we can conclude as follows : If one aspect of the *hetu*, namely, its first aspect, its presence upon the subject of the conclusion, is either non-existent or uncertain,

1. ibid. p. 178.

the *hetu* is called *asiddha*. Just because it is *asiddha*, it conveys no knowledge about the subject. It neither conveys cognition of the predicate nor of the reverse of it nor of something uncertain; it is a reason cognizing nothing. Such cognition would never convince anyone. This meaning is clearly implied just in the name *asiddha* (unreal).[1]

Consider this argument : "When it must be proved that the sounds of speech are not an eternal entity, the reason (=*hetu*) "because they are visible'—is unreal for both the parties. This reason is wrong for both sides, the respondent, (the Mīmāṁsaka who maintains the eternality of the sounds of speech),[2] and the opponent, (the Buddhist who denies it). For instance, "Trees

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1. BL vol. II, p 172.
2. The ancient Mīmāṁsakas (jarad-mīmāṁsakas) in their speculations on the nature of sound established a theory according to which the 'sounds of speech (gakārādi) were imagined as unchanging internal appurtenances inherent in the cosmic ether (ākāśa), their existence occasionally manifested itself when a conclusion of air was produced by the conjunction or disjunction of objects—*Tātparya*, p. 307. The Naiyāyikas. NS 2.2.13ff., cp. VS. 2.2.32, opposed this theory by three arguments ; (1) the sounds of speech have a real beginning or causes, (2) they are perceived not in the place of their origin but when having reached the organ of audition, hence the existence of a series of momentary sounds must be assumed in the universe, and (3) these sounds are variable in intensity and character, hence at every moment we have different sound. The last argument, Uddyotakara remarks, is Buddhistic, since it implies 'universal momentariness'—*sarva-anityatva-sādhana-dharmaḥ*, and Vācaspatimiśra identifies it with a reference to the Buddhist "law of otherness" (*viruddha-dharma-saṁsarga*) according to which every variation in time, place and character makes the object "another' object—the Buddhist starts with a deduction of the non-eternity of the sounds of speech from their conception of every existence in general as a sum of momentary events having only apparent stability, and then proceeds in order to the (1) fact of having a beginning (2) causality, (3) concomitant variability, and (4) dependence on

are animate beings"—This should be deduced from the fact that "They die when the entire bark is taken off". It is not accepted by the opponent. He defines death as extinction of sensations, sense-organs and life. Such a death does not occur in trees. The Digambara Jainas maintain that trees are sentient beings.[1] They point to the fact that they die as soon as they are entirely stripped of their bark. Here the *hetu* is unreal on the Buddhist part, because a Buddhist understands by death the cessation or extinction of sensations, of sense organs and of life. Sensation means here visual and other sensational consciousness. Under sense-organs we understand some subtle matter in a living body, located on the ball of the eye and in other parts of the body. Its existence is inferred from the fact of the production of visual and other sensations. Under "life", in common parlance, breath is here meant. However, why is this reason which is advanced by the Digambars unreal ? The reason behind this is that there is no such death consisting in the extinction of sensation etc. in the trees. Extinction presupposes previous existence. If someone admits the extinction of consciousness in trees, he cannot but admit its previous existence. Therefore, since no consciousness in trees is admit-

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a wilful effort, (1) and (4) of these arguments corresponds to the (3) of the Naiyāyikas, and (2) and (3) are combined in their first one (ādir=Kāraṇam). There is more logic in the Buddhist arrangement. The first argument contains in itself all the others, the second directly (*sva-bhāvena*) the third and fourth-indirectly (*upādhinā*). All these conceptions existence, origination causality, concomitant variation, dependence on the will are analytically connected in the Indian sense of the term Svabhāva, the first includes all the others, it is of great expression and less intention than the others which are its subalterns – again which is based on the observation. From this point all judgments of co-existence, or co-inherent attributes also founded on experience just as those which are founded on uniformity of succession or causation.

1. The Jainas assume that plants are animate beings possessing only one sense faculty, viz. the tactile sense. CP, V. Glasenapp, Jainismus, p. 172.

ted, neither can its extinction be maintained. It might be objected that extinction is death and this really occurs in trees. This is quite reasonable, but the reason adduced, by the Digambara, is a death which is conditioned by the previous existence of consciousness, not mere extinction. Here that death which is taken as a *hetu* (reason) is *asiddha* (unreal), and that which is real, consisting in extinction is not the *hetu* (reason).

To sum up this point : The Digambara takes as reason (*hetu*) death in general, without making a difference between a death concomitant with the predicate sentient being) or not so concomitant. Hence the respondent is here mistaken about the connotation of the word 'death' which he adduces as a *hetu*. Consequently he thinks that extinction is a real *hetu*, because experience teaches (*darśanāt*) that trees are subject to death from extinction. The opponent, on the other hand, has the right conception, therefore the *hetu* is for him *asiddha*.

Dharmakīrti provides another alternative in which he points out that supposing a supporter of the Sāṅkhya system wishes to prove that the emotions, pleasure etc., are unconscious, and refers to the fact that they have a beginning or that they are impermanent. This argument is *asiddha* for the disputant himself. The reason is that consciousness (*puruṣa*) in the Sākhya system is imagined as an eternal, changeless, motionless substance, as the pure light of consciousness which is being reflected in the mental phenomena. The latter are imagined as being by themselves mere collocations of material particles (*guṇas*), unconscious (*jaḍa*) in themselves. For the adept of this system whatsoever is impermanent (*pariṇāmin*) is unconcious. But from another viewpoint the Sāṅkhya declares all phenomena to be eternal (*sarvaṁ nityam*), since they are only modifications of one matter (*prakṛti*) with which they are identical according to the principle of identity between cause and effect (*satkārya-vāda*). On the other hand, the Buddhist denies the existence of a substantial matter, and replaces it by momentary flashes of special elements (*dharma*), or forces (*saṁskāra*). In the present case the Sāṅkhya apparently wishes to deduce his idea of unconscious mental phenomena out of the Buddhist idea of impermanent elements, assuming evidently

that whatsoever is a momentary flash cannot be conscious, since consciousness includes memory. In other words we can say that in this instance beginning and impermanence are to be taken separately, not simultaneously. Both these attributes are not real from the standpoint of the disputants of the Sāṅkhya. In short, if the disputant did possess a knowledge of the arguments by which these theories are supported (and if he did believe in them), they would be *sad-hetu* (for him, but since he has no proper knowledge of them, they are unreal (*asiddha*) from his own point of view.

The division of *hetvābhāsa* which we find in the original *Sūtra* of the Nyāya and Vaiśeṣika systems, as well as in the Bhāṣya of Vātsyāyana, is substantially different from the Buddhist classification which was first established in strict conformity with his theory of the three aspects of a logical reason, by Dignāga in his *Hetu-cakra-Samarthana*. The Bhāṣya of Praśastapāda has then adopted the main lines of Dignāga's classification and all the subsequent evolution of this part of the science of Indian logic is influenced by it.[1] Since all objects in the whole universe are interconnected and logically dependent upon one another, either as uniformities of coexistence or as uniformities of succession, every object is *eo ipso* a logical reason and the possibilities of *hetvābhāsas* are infinite. Those that are not worth considering have been set aside, as we have seen, as impossible thesis. After that come the fallacies of the *hetu* properly speaking which are fallacies of one or of more than one of its three aspects. The cases where the first aspect alone is either wrong or uncertain are all fallacies of minor premise. The cases when the second and third aspects of the logical reason are either wrong or uncertain are fallacies of concomitance, or of the major premise. All the cases where the minor premise is wrong, i e, where the *hetu* is either totally or partly absent on the subject of the conclusion, or where its presence there is uncertain, are called *asiddha-*

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1. (a) Stcherbatsky, "Rapports entre la Theorie Bouddhique de la connaissance et Lenseignemeut des autrs Icoles", the Muśeon V. Cp. and also.
   (b) Ranadle's article in the *Mind* 1924. p. 405 ff.

hetus. These are material fallacies or fallacies of fact, *Fallacia extra dictione*. *Fallacia in dictione* is the fallacies of the expression, where the thought is all right, but wrongly expressed are treated as wrong examples (*na duṣṭaṁ vastu tathāpi vaktrā duṣṭam darśitam*). All other fallacies are also, strictly speaking, fallacies of fact, since they are fallacies of a wrongly established concomitance, and concomitance is always a generalization from facts. When the presence of the *hetu* (middle term) upon the whole compass of the *pakṣa* (=minor term) is an ascertained fact, comes the next step of ascertaining its position between similar and dissimilar cases. The conclusion is right *ubi non reperitur instantia contradictoria*. This again must be ascertained by facts. But these latter fallacies correspond more closely to fallacies of undistributed middle (*hetu*) and of illicit major and can be termed *hetvābhāsas* in the stricter sense. We thus have two main groups of fallacies which we can call fallacies of the minor premise and fallacies of the major premise. If the minor premise (*pakṣa*) is not supported by the facts, the answer must be "the *hetu* is *asiddha*" (*rtāgs ma grub=asiddha hetuḥ*). When the concomitance between *hetu* and *sādhya* is not warranted, the answer must be "concomitance is not produced" (khyab-pa ma hbyun=*vyāptir na bhavati*).

Dignāga distinguished four varieties of *asiddha hetu*. These are as follows :

(1) *Ubhayāsiddha*, both untrue, i.e., the truth of the minor premise (*pakṣa*) is rejected by both parties.

(2) *Anayatarā-siddha*, either-untrue, i.e. the truth of minor premise is rejected by one of the disputing parties.

(3) *Saṁdigdhāsiddha*, being doubtful, i e. the truth of minor premise is not certain. For instance, "there is fire because there is mist."

(4) *Āśrāyasiddha*, being unfounded. The word unfounded is used here in an unusual sense, it means that the minor premise is not based on a subject accepted by both sides, i.e. at least one of the disputing parties rejects the existence of the subject. Since the subject is not accepted, the minor premise will naturally be rejected.

The illustrative case given in the *saṁdigdhāsiddha* is "There is fire because there is mist". In the commentary,[1] it is suggested that there was some mist-like thing, which may be any one of the following : mist, dust, smoke or mosquitoes. Since one could not decide which one it definitely was, the reason is considered as being doubtful.

If one term or premise is doubtful one, the number of fallacies would be doubted, because there are the fallacies for the wrong ones and there are those for the doubtful ones. Why is it confined to the hetu only ? If it is "because there is some mist-like thing, which includes the possibility of smoke, the major premise will be : "some mist-like thing (i e. smoke) implies the existence of fire ; (while some other mist-like thing does not)". This is inconclusive type *Ubhayapakṣaikadeśavṛtti*, both partial.

Let us now consider *āśrayāsiddha*. In Śaṅkarasvāmin's list of fallacy we find one fallacy, i e. *aprasiddhaviśeṣya* unaccepted subject (*pakṣābhāsa*), which was regarded as a *hetvābhāsa*.

Now, it seems to me that there is some difference between the premises "Hares have horns" and that when the *sādhya* is already fallacious because the minor term (*pakṣa*) represents a null class, the disputant still tries to prove it ; then both the *sādhya* and the proof are fallacious. It is nevertheless not justified to regard one fallacy as two separate ones. Should this be the case, i.e one part of the syllogism is considered as fallacious because of the fault of another part ? Then why did Śaṁkarasvāmin put this fallacy into two ?

We find one possible explanation in which Śaṁkarasvāmin adopted *āśrayāsiddha* from Dignāga. It was written in the *Nyāyamukha*.[2] "...(nor is it a *pakṣadharma*) when the subject (*pakṣa*) is not accepted ; e g. the *ātman* is all-pervading, because it produces joy, etc. Reasons of this kind cannot be considered as a proof.

Perhaps Śaṁkarasvāmin failed to realize that while Dignāga wrote the above-mentioned passage, the four fallacies of the *sādhya*

1. NPGC. Taisho 1840, p. 121C.
2. N M. Taisho, 1628, p. 1b.

including *aprasiddhaviśeṣya* were not mentioned by Dignāga, but were later added by Śaṁkarasvāmin himself As a result, when he compiled a list of fallacies, he included both what Dignāga had mentioned and what Dignāga had not. Thus he repeated the same fallacy twice. Therefore either *aprasiddha-viśeṣya* or *āśrayāsiddha* is redundant.

Let us now consider the remaining fallacies viz. *ubhayāsiddha* both untrue, and *anyatarāsiddha*, either untrue. I find one possibility in which *ubhayāsiddha* can be included in *anyatarāsiddha*.

Kuci Chi a Chinese commentator while discussing the list of fallacy, introduced few new factors, which are useful to understand the fallacious *hetu*. For the sake of clarity here I wish to mention a few of them which may be useful in the present context. These are as follows :

1. W=wholly, and P=partially, 2. X=existential and Y=non-existential ; 3 D=disputant, O=opponent, and B=both disputant and opponent. The remaining factors can be discussed from time to time.

III

A FORMAL ANALYSIS

For the sake of convenience I wish to introduce few more common symbols : i=invalid, v=valid and iv=invalid not because of commiting the fallacy in question but because of committing some other fallacy. Again, we have more symbols which are as follows.[1] + =agreed by, and − =disagreed by.

As I already pointed out *asiddha hetvābhāsa* is the fallacy when we violate the first clause or the first rule of the *Trairūpya*, i.e. $(x)\ (fx \supset gx)$. For the sake of convenience, I wish to restate a few portions of what I have already discussed. Thus this can be read as follows :

"The property g is present in everything which possesses the property f". "Everything which possesses the property f possesses

1. BFL p. 127.

the property g." "For every x, x is an f implies x is a g" or "(x) (fx ⊃ gx)" or "ab=o."

Let us now consider Kui chi's treatment.[1]

(1) *Ubhayāsiddha* 'both untrue.'

W. Eg.	...	...	U (f⊃g)	...	...	i
W.~Eg.	...	...	U (f⊃g)	...	...	i
P. Eg.	...	...	U (f⊃g)	...	...	i
P.~ Eg.	...	...	U (f⊃g)	...	...	i

In other words we can say that the truth of minor premise is rejected, wholly or partially, being existential or non-existential. In this fallacy and several others following the problem of whether the *hetu* (middle term) represents a null or a non-null class enters in. Therefore in the formulae there is the factor Eg.

(2) *Anayatarāsiddha* : Either unture runs as follows :[2]

W. Eg.	+	—	U (f⊃g)	i
W. Eg.	—	+	U (f⊃g)	i
W.~Eg.	+	—	U (f⊃g)	i
W.~Eg.	—	+	U (f⊃g)	i
P. Eg.	+	—	U (f⊃g)	i
P. Eg.	—	+	U (f⊃g)	i
P.~ Eg.	+	—	U (f⊃g)	i
P.~ Eg.	—	+	U (f⊃g)	i

This fallacy can be read as follows :

"The truth of the minor premise (*pakṣa*) is rejected wholly or partially, being existential or non-existential, by either the disputant or the opponent."

(3) *Saṁdigdhāsiddha* being doubtful [3]

+ = not questioned by

— = questioned by

W	—	—	U (f⊃g)	i
W	+	—	U (f⊃g)	i
W	—	+	U (f⊃g)	i

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1. ibid. p. 132.
2. ibid.
3. ibid.

P	—	—	U (f⊃g)	i
P	+	—	U (f⊃g)	i
P	—	+	U (f⊃g)	i

This fallacy can be read as follows : The truth of minor premise is rejected, wholly or partially, by disputant or opponent or by both the disputant and the opponent Thus, we have three possibilities of acceptance, viz. by disputant, opponent or both disputant and opponent. Hence, we have three possibilities of wholly accepted and three possibilities of partially accepted. Therefore we have six possibilities of being doubtful.

(4) *Āśrayāsiddha* Being unfounded.[1]

+ = agreed bv

— = disagreed by

W	Eg.	—	—	(Ef.	U (f⊃g))	i
W	Eg.	+	—	(Ef.	U (f⊃g))	i
W	Eg.	—	+	(Ef.	U (f⊃g))	i
W	Eg.	—	—	(Ef.	U (f⊃g))	i
W	Eg.	+	—	(Ef.	U (f⊃g))	i
W	Eg.	—	+	(Ef.	U (f⊃g))	i
P	Eg.	—	—	(Ef	U (f⊃g))	i
P	Eg.	+	—	(Ef.	U (f⊃g))	i
P	Eg.	—	+	(Ef.	U (f⊃g))	i

This fallacy runs as follows : "The truth of the minor term is rejected, wholly or partially, being existential or non-existential, by either disputant or by opponent or by both disputant and opponent."

If we combine the two varieties of the *asiddhahetvābhāsa* viz. *ubhayāsiddha* and *anyatarāsiddha*, then we find sixteen possible combinations. In sixteen possible combinations we find one combination which is to be considered valid and also we find two combinations which are to be considered as combinations which are practically impossible, e g. not contradicting, with partially is meaningless. These[2] combinations run as follows :

1. ibid. p. 133.
2. ibid. p. 137.

1.	W	Eg.	+	+	U (f⊃g)	V
2.	P	Eg.	+	+	U (f⊃g)	*
3.	W	Eg.	+	−	U (f⊃g)	i
4.	P	Eg.	+	—	U (f⊃g)	i
5.	W	Eg.	—	+	U (f⊃g)	i
6.	P	Eg.	—	+	U (f⊃g)	i
7.	W	Eg.	—	—	U (f⊃g)	i
8.	P	Eg.	—	—	U (f⊃g)	i
9.	W∼	Eg.	+	+	U (f⊃g)	i
10.	P∼	Eg.	+	+	U (f⊃g)	*
11	W∼	Eg.	+	−	U (f⊃g)	i
12.	P∼	Eg.	+	—	U (f⊃g)	i
13.	W∼	Eg.	-	+	U (f⊃g)	i
14.	P∼	Eg.	—	+	U (f⊃g)	i
15.	W∼	Eg.	—	−	U (f⊃g)	i
16.	P∼	Eg.	—	—	U (f⊃g)	i

From the above list we find that (1) is to be considered to be valid. It is quite clear that when both the disputant and the opponent reject the minor premiss wholly, which is the rule. In other words : "The property g is present in everything which possesses the property f ; and everything which possesses the property f possesses the property g,"—which is the first clause of the *Trairūpyā* ; and hence to bc considered a valid.

Further, we find (2) and (10) meaningless. How these two are meaningless ? Let us consider first (2) i.e. P Eg. + + U (f⊃g)* This means that the truth of the minor premiss is rejected, being existential either by both parties, or, by either the disputant or by the opponent." This argument is absurd. Hence it is meaningless.

We find the same absurdity in (10). The difference between the two lies only in the issue whether g is existential or non-existential and the argument is the same except that in (2) the issue is regarding existential, while in (10) the issue relates to non-existential. Therefore these two combinations are meaningless. Hence we have now thirteen invalid combinations. In this way *Ubhayāsiddha* is included in *anyatarāsiddha*.

Further, if we, combine both agreed in the sense of wholly, and both agreed in the sense of partiality on the one hand and

both disagreed in the sense of wholly and both disagreed in the sense of partially, on the other hand, then we have *saṁdigdhāsiddha*[1] :

(1)	W	+	+	U (f⊃g)	V
(2)	P	+	+	U (f⊃g)	*
(3)	W	+	—	U (f⊃g)	i
(4)	P	+	—	U (f⊃g)	i
(5)	W	—	+	U (f⊃g)	i
(6)	P	—	+	U (f⊃g)	i
(7)	W	—	—	U (f⊃g)	i
(8)	P	—	—	U (f⊃g)	i

In *saṁdigdhāsiddha*, like the combination of *Ubhayāsiddha* and *anyatarāsiddha*, we find that (1) and (2) are to be considered valid and meaningless respectively. The justification would be the same as I mentioned above. Therefore, we have six varieties of *saṁdigdhāsiddha hetvābhāsa*, i.e. (3)—(8).

Furthermore, we have *āśrayāsiddha*. Again, we combine both agreed in the sense of wholly and both-agreed in the sense of partially, on the one hand ; and both disagreed in the sense of wholly and both-disagreed in the sense of partially, on the other hand. Then we have[2] :

(1)	W	Eg.	+	+	U (f⊃g)	V
(2)	P	Eg.	+	+	U (f⊃g)	*
(3)	W	Eg.	+	—	U (f⊃g)	i
(4)	P	Eg.	+	—	U (f⊃g)	i
(5)	W	Eg.	—	+	U (f⊃g)	i
(6)	P	Eg.	—	+	U (f⊃g)	i
(7)	W	Eg.	—	—	U (f⊃g)	i
(8)	P	Eg.	—	—	U (f⊃g)	i
(9)	W	Eg.	—	—	U (f⊃g)	i
(10)	P	Eg.	+	+	U (f⊃g)	*
(11)	W	Eg.	+	—	U (f⊃g)	i
(12)	P	Eg.	+	—	U (f⊃g)	*

1. ibid. p. 138.
2. ibid.

(13)	W	Eg.	—	+	U ($f \supset g$)	i
(14)	P	Eg.	—	+	U ($f \supset g$)	*
(15)	W	Eg.	–	—	U ($f \supset g$)	i
(16)	P	Eg.	—	–	U ($f \supset g$)	*

In this fallacy the first two, as usual, are (1) valid and (2) meaningless. We find four more varieties of meaningless, These are (10), (12), (14) and (16). The justification will be the same as I already mentioned. Thus we have ten varieties of *āśrayā-siddha hetvābhāsa*.

From the above consideration we can say that *asiddha hetvābhāsa* has four varieties viz (1) *ubhayāsiddha*, (2) *anyatarāsiddha*, (3) *saṁdigdhāsiddha* and (4) *āśrāyasiddha* We already pointed out that (1) can be included in (2). Thus on the combination of these two we have thirteen varieties of invalid hetus. Again, (3) has six varieties and (4) has ten varieties. Further, I already pointed out that *saṁdigdhā siddha* is a variety of *anaikantika hetu*. Hence this variety of *asiddha-hetvābhāsa* may be struck out from the varieties of *asiddha hetu*. Thus we have two varieties of *asiddha hetu* viz. (1) the combination of *ubhayāsiddha* and *anyatarāsiddha* (i.e. *ubhaya*+*anyatara*=*asiddha*), and (2) *āśrayāsiddha*.

Let us now consider Gaṅgeśa's view regarding the *asiddha-hetvābhāsa*. From Gaṅgeśa onwards, the Neo-Naiyāyikas mention three forms of *asiddha hetu*,[1] viz. (1) *āśrayāsiddha* or having an unproved subject (*pakṣa*). For instance, "the sky-lotus in fragrant, because it belongs to the class of lotus." In this reasoning, the subject of inference, i.e the sky-lotus, is something unreal. (2) *svarūpāsiddha* or a *hetu* not related to the *pakṣa*. For instance, "Sound is non-eternal, because it is visible." In fact, in the case of non-eternality visibility is such that which is never related to 'Sound'. Hence it is unreal. (3) *Vyāpatvāsiddha* or a *hetu* having no proved concomitance with the *sādhya*. Consider this argument. "The hill contains fire, because it contains black smoke In this argument "black smoke" is an *asad-hetu*, because

1. H.I.L. p. 439.

there is already a universal concomitance between smoke and fire and as such the addition of 'black' to 'smoke' is redundant.

In Gaṅgeśa's case of *vyāpyatvāsiddha* we also find the same difficulty as we find with Dignāga's case with the variety of *saṁdigdhā:iddha*. The defect (*doṣa*) of *vyāpyat vāsiddha* may occur in two ways : (1) when there is a 'redundant adjective' (*vyartha-viśeṣaṇa*) added either to the *hetu* (in the instance just cited) or to the *sādhya*. e. g. "the hill contains *golden* fire, because it contains smoke." (2) When the concomitance of the *hetu* with the *sādhya* 'depends upon some extraneous condition' (*sopādhika*). For instance, "The hill contains smoke, because it contains fire." Here the *hetu*, i.e. 'fire', is concomitant with the *sādhya*, i e. 'smoke', only when there is the 'extraneous condition' (*upādhi*), i.e. 'the presence of wet fuel'. Other Naiyāyikas, however, consider this second form, i.e. *sopādhika*, as but a form of irregular' (=*savyabhicāra* or *anaikāntika*).

CHAPTER VI

PRAKARAṆASAMA (*NEUTRALIZED*) *HETU*

Gautama defined[1] *prakaraṇasama hetu* as that which is put forward to establish a difinite conclusion, while it is one that only gives rise to suspense and vascillation in regard to the point at issue. In other words, (the pseudo-*hetu* called) the 'counteracted' (*prakaraṇasama*) is a mark, 'when employed for final ascertainment' (*nirṇayārtham apadiṣta*), gives rise to the suggestion (*cintā*) of 'doubtful alternative possibilities' (*prakaraṇa*). It is also known as *satpratipakṣa* (counter balanced) *hetvābhāsa*.

Vātsyāyana remarks[2] that the term *prakaraṇa* (point at issue), stands for two opposite views on a doubtful question, neither of which is definitely ascertained;—the '*cintā*', 'suspense', in regard to such point at issue, consists in that the desire to ascertain the truth, that whole process of investigation, which, starting with the doubt, ends with the definitive cognition. Now that *hetu* which really only gives rise to the said suspense, if put forward as leading to definitive cognition, does not differ (in point of being doubtful) from the point at issue; as both sides would be equal (equally doubtful) Thus being similar (*sama*) to the point at issue (*prakaraṇa*), it does not lead to any definite conclusion.

From the above consideration, we can say that the two opposite views, which constitute the 'point at issue', have been here (i.e. in Nyāya terminology) called '*prakaraṇa*' in the sense that these views are what are *made the sādhya* (*sādhyatvena prakriyate*) by the two parties......... The 'suspense' in regard to these views, is due to the real truth on the point being not known. For example, when a man puts forward the fallacious reasoning—— "Sound is non-eternal, because the properties of an eternal thing are not found in it'——the person to whom this is addressed falls

1. NS. 1.2.7.
2. N.Bh. 1.2.7.

into a suspense, as he does not find, in sound, either such properties as are inseparable from *non-eternality;* having therefore his doubts thus aroused, he proceeds to enquire and investigate, so that the urging of the *non-finding of the properties of an eternal thing*, as brought forward to prove *etenality*,—while it leads only to a doubt as to *eternality* and *non-eternality*,—Constitutes the fallacious *hetus* called *prakaraṇasama* .. ..'Both sides would be equal', i e. just as the not finding of the properties of the external thing would indicate *non-eternality*, exactly in the same manner would the not finding of the properties of a non-eternal thing indicate eternality......The explanation of the term as 'similar to the point at issue' (*prakaranasya-samaḥ*) is only by way of indicating what the etymology of the word signifies. It is not meant that 'similarity to the point at issue' constitutes the denotation of the term In fact what the term really denotes is only being neutralised (i.e having an opponent equally strong).

After considering the etymological meaning of '*prakaraṇasya-samaḥ*', now consider the following example : "Sound is non-eternal, because we do not find it the properties of the eternal thing ; and we have found, in the case of such things as the '*Dik*' and the like, that what is not found to possess the properties of an eternal thing is non-eternal." That reasoning, in which what is put forward as the *hetu* is the charaeter that is admitted, by both parties, to be common to the *sādhya* and its reverse, is 'equally to doubt' is not leading to a certain conclusion; and such a *hetu*, therefore, has been called 'indecisive' in the case of the *prakaraṇasama.* On the other hand, what gives rise to the point at issue is not 'doubt', but only that factor of 'doubt' which in the fact of there being found nothing which could favour either of the two opposite views. For example, in regard to the reasoning cited, as I already pointed out, both the properties of 'both eternality and non-eternality' are equally doubtful Then, how do these two views give rise to 'suspense in regard to the point at issue'? Because in the contrary case, i.e. in the case of our finding peculiarities favouring either of the two views, there would be an end to the 'point at issue' (one of the views being definitely ascertained). For instance, if we actually found in sound, properties of the *eternal* thing, if we found in it the properties of the non-

eternal thing then also it should cease to be a 'point at issue', Thus, then we find that, inasmuch as such a *hetu* gives rise to or (lends support to) both the oppositive views, it cannot lead to a definitive cognition in regard to either of them.

But Phaṇibhūṣana comments that the example of this *asad-hetu*, with the addition of an explicit mention of the counter-thesis suggested—as found in some other available versions of the commentary is more appropriate. It is : "Sound is non-eternal, because the characteristic of anything eternal is not perceived in it. Whatever is perceived as without the characteristic of anything eternal is found to be non-eternal, like the cooking pot, etc. At the same time, sound is eternal, because the characteristic of anything non-eternal is not perceived in it. Whatever is perceived as without the characteristic of anything not-eternal is found to be eternal, like 'empty space' (*ākāśa*) etc."

Vātsyāyana makes the difference between *savyabhicāra* or *anaikāntika* and *prakaraṇasama* by pointing out that when a property that is admitted to be common by both the parties, i.e. disputant and opponent, is put forward as the *hetu*, it is the cause of doubt. Such a *hetu*, which is 'equal to doubt' (*saṁśayasama*), is generally known as *savyabhicāra*. But in the fallacy of the tautological *hetu*, what gives rise to the question in dispute is only that specific form of doubt which consists in the fact that there is nothing which can favour either of the two parties.[1]

The *hetu*, it is objected, is in two different form the unestablished *hetu* (*sādhyasama*). The non-perception of the properties of the non-eternal thing is sound is as much to be established as the eternality itself. And this is exactly what the *sādhyasama* fallacy stipulates. Uddyotakara met this objection. He points out that this objection is not valid. In the fallacy of tautological *hetu* what is put forward as the *hetu* is that which only gives rise to a specific form of doubt, while in the *sādhyasama* the property that is put forward as *hetu* is as much to be proved as the proposition itself. Thus both the *hetu* and the proposition are on the same footing.

Another objection that is raised against this fallacy is that it is the same as the inconclusive *hetu*. In that case we might as well

1. ibid.

say that there it no difference between the perception, the inconclusive *hetu* and the tautological *hetu*, a perception is also a cause of doubt.

Again, Uddyotakara points out the difference between the two fallacies as follows : In the tautological *hetu* the property that is put forward as the *hetu* is one of two contrary properties, both ol which are equally unperceived, that is to say, when both the distinguishing properties of a thing are equally non-perceived, if one of them put forward for removing of the doubt, it is a case of the tautological *hetu*. This means that it is not possible to indicate the non-perception of both distinguishing properties as a fallacious *hetu* of this kind.

According to some philosophers the property of being different from the body when put forward to establish the eternality of the *ātman* is an example of the tautological *hetu* Uddyotakara objected[1] to this by pointing out that even if the Ātman were different from the body this itself would not prove its existence. What would prove it is that it is known by the characteristic through which it manifests itself. Therefore the *hetu* being different from the body is inconclusive.[2]

But Dignāga considered *satpratipakṣa*[3] as a variety of 'uncertain' *hetu*. According to him '*satp atipakṣa*' hetu falls in the line with its own contradiction, i.e. it is selfcontradictory. Why is it not mentioned here ? Because it cannot occur in the process of natural ratiocination".

Dharmakīrti rejects counterbalanced (*satpratipakṣa*) *hetu*, because it occurs only when a *hetu* contradicts a principle established on the ground of being its cotradictory. Or else, it is a contrary *hetu*, because it proves the reverse of a fact established on other grounds, and at the same time it is a right *hetu*, since it is concomitant with its own special consequence. Thus it is contrary and right at the same time, which is absurd. Hence Dharmakīrti

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4. NV 1.2.7.
5 GNP. pp. 283-284.
6 BL Vol. 1, p. 351 in which he points out that prakaraṇasama is easily converted in the satpratipakṣa, (counter balanced) or "antinomic" hetu. see also—GNP pp. 283-84.

omitted this fallacy because a *hetu* simultaneously right and wrong, cannot occur in the process of natural ratiocination.[1]

The proper domain of inference is the *Trairūpya.* This *Trairūpya sambandha,* as far as it is established by positive facts (*pramāṇa-siddha*), constitutes the domain of inference. It produces inference. Therefore, we call it the domain of inference. An inference is produced from such a threefold connection *Trairūpya sambandha*) when proved by positive facts. Therefore, this alone is the real domain of inference. Since real inference alone is our subject-matter, we cannot deal with a *hetu* which is at once right and wrong, i. e. there is no possibility of contrary and non-discrepant being together.

From the above consideration we can say, indeed, when we have proposed to deal with threefold logical connection as far as it is established on real facts, we can introduce only such logical fallacies which are (albeit partly) established on real facts. Here what the author wishes to express is not that contradiction cannot partly repose on facts, as every fallacy does, but that, although in our natural process of every day thinking we can draw fallacious

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1. The *viruddhavyabhicāri* fallacy of Dignāga has survived in the Nyāya-Vaiśeṣika united system under the name of *sat-pratipakṣa,* and a corresponding appect of valid *hetu,* the *asat-pratipakṣa* has been invented, in order to save the right proportion between the number of the aspects of a valid *hetu* and the corresponding number of fallacies. Praśastapāda, p. 239.2-3, includes it in the category called by him *anadhyavasita hetu.* He admits that conflicting argument, such as pointed out by Dignāga, occurs in *śāstra,* but he objects to a name of a doubtful *hetu* for it. A doubt is produced when we are not capable to decide between two aspects of the same thing, and not when an argument is counterbalanced by another one, Cp. N. Kandalī, p. 241.13 ff. It is clear that Praśastapāda's words are a reply to Dignāga's theory. Bodas thinks, Tarka Saṁgraha, p. 307 (Bombay, 1918), that the *satpratipakṣa* fallacy is foreshadowed by Gotama's *prakaraṇasama,* NS. 1.2.7, but this is doubtful.

conclusions, we cannot at once draw to diametrically opposed conclusions. This is only possible when the constructors of scientific theories depart a long way from the safe ground of realities and dwell in the sphere of metaphysics. But a *hetu* which is right and contradictory is not something established on the basis of real facts. Therefore, since it is impossible, it is omitted in Dharmakīrti's system.

In this context it is very natural to ask why should it be impossible ? The answer would be as follows : "Because there is no possibility of contradiction of effect (*kārya*) and own existence (*svabhāva*) whose essence has been indicated, and of non-perception (*anupalabdhi*)." From this reasoning he tries to emphasize that all our thinking, or else all synthesis of thinking, consists either in affirmation of succession (saṁtāna) or of coinherent attributes, or in the affirmation of absence of something on a bare place. There is no other general principle than these three ; they control the entire domain of thought.

But perhaps there is some other possible connection between realities ? Besides these three the Buddhists deny other possibilities of inseparable connection between realities. But, then, where has Dignāga exposed the fallacy of a counterbalanced *hetu* ? Since two contradicting, mutually repugnant arguments cannot appear at once in the natural run of thought, therefore the contradicting—nondiscrepant proof—fallacy has been established with reference to inference founded on dogma, not starting from observing the force of real facts in pondering over such objects.

From the above consideration we have to note that the contemplation of a non-real object is mere construction, its force is its efficiency, from it starting, not from evidence, having its stand on mere construction, the three-aspectedness of inference founded on dogma, not on evidence (=*āgama siddha-trairūpya-anumānasya aprāmāṇyāt*). What is the proper place of such dogmatic arguments ? Dharmakīrti points out that there are subjects (*artha*) which are the proper place for such arguments, viz. metaphysical (*atīndriya*) problems, problems unaccessible neither to direct observation nor to correct ratiocination, as, for instance, the problem of the reality of the universals. When the investigation

of these problems is tackled, dogmatical argumentation flourishes. Hence Dignāga mentioned this fallacy (i e. counterbalanced) as a special fallacy in connection with such metaphysical problems only.

Someone may raise the objection : why again does such fallacy occur in dogmatic argumentation only ? It happens that promoters of systems are mistaken and ascribe such attributes as are incompatible with their nature Indeed, confused makers of science or scientific works superimpose such and such unexisting nature. But if scientific authorities can be mistaken, how can we believe ordinary men ? Dharmakīrti holds that when the argument is founded on the properly observed real condition of real things, when either a case of necessary succession or of necessary coexistence or of absence is thus established, there is no room for contradiction.

Dharmakīrti provides an example of two mutually exclusive reasonings. The first example runs as follows : Major premise : A thing which is simultaneously inherent (*abhisambadhyante= samaveti*) in different objects, wheresoever they be situated, must be ubiquitous.

(Example) : Just as the cosmical ether.

(Minor premise) : A universal is simultaneously inherent in different objects which are to be found everywhere.

Conclusion : Hence a universal must be ubiquitous."

"An attribute which is simultaneously and obviously present in a number of objects in which it inheres, wheresoever they be situated"—this makes up for the subject of the general proposition "Is ubiquitous"—is its predicate. It expresses that the fact of such simultaneous presence is invariably concomitant with omnipresence, and therefore, subaltern to the latter.

If something possesses the essence of being inherent in a number of other things it necessarily must be present in the places occupied by them. Therefore the fact that a universal is present in a place is deduced from the fact of its being inherent in the particular things there situated.

In this context, now, we can say that pervasion of real things situated in this place is subordinate to existence in that place.

Because if there is no existence in its place, there is no pervasion of it, there will be no inherence—connection whose essence is pervasion. But there is pervasion, therefore, there is presence in its place. Therefore this is an own-existence reason (*hetu*).

Since Dharmakīrti admits only two varieties of deduction, deduction of necessary succession (*kārya*) or causality and deduction of necessary coexistence or analytical deduction (*svabhāva*), he evidently could construct the conclusion about the real presence of universals in the individual things in which they inhere as an analytical judgment or judgment of necessary coexistence. The subject of the judgment the fact of inherence—is alone sufficient to deduce the reality or real presence of the universal. The judgment is so constructed that its validity reposes on the law of contradiction alone "what really inheres is really present, inherence is presence".

Let us now consider the second The contradeduction runs as follows : "Major premise : If something perceptible is not perceived upon a place, it is absent from it. Example : As an absent jar Minor—premise : A universal, although to be perceptible, is not perceived in the intervals between the corresponding particulars. Conclusion : Hence it is absent." This negative conclusion and the former analytical deduction, since they contradict one another, produce an '*uncertain*' conclusion.

What fulfils the conditions of perception, i.e. what is a possible object of perception, what may be imagined as perceived —such is the subject of the general proposition. "It is here absent", i e. we can take action without expecting to find it there—such is the predicate. It is thus stated that the first is subordinate to the second. The example is an absent jar. This negative conclusion and the aforesaid analytical deduction prove two conclusions which are contradictory of one another—they produce uncertainty about the subject of the inherence making the existence of universals doubtful.

On this basis Dharmakīrti points out that there is no such object in existence which should really possess contradictory properties. One of the reasons here proves the presence of universals in other particulars and in empty space. The other,

being negative, proves their non-existence there But one thing cannot at the same time and in the same place be both existent and non-existent, because this goes against the law of contradiction. Thus it is, that the kind of universal which is theoretically constructed has two predicates simultaneously--omnipresence and non-omnipresence. The two reasons establish nothing more than the conflict with each other. However, in objective reality such contradiction is impossible. Hence Dharmakirti rejects Uddyotakara's *satpratipakṣa-hetvābhāsas prakaraṇasama-hetvābhāsa*).[1]

The form of counterbalanced *hetu* would be as follows :[2]
$(U (f \supset g). U (g \supset h) \supset (f \supset g)). (U (f \supset g'). U (g' \supset \sim h) \supset U (f \supset \sim h))$.

In short, we can say that the *sādhya* is rejected, being existential or non-existential, by either the disputant or the opponent, or both the disputant and the opponent. If *sādhya* is rejected, being existential or being non-existential by both disputant and opponent, it would not be considered as valid one in either of the case. Again, if *sādhya*, at the same time and place, is rejected by either one of the parties, then it becomes invalid. Then whatever the conclusion may be, as Dignāga holds, it becomes fallacious. Hence an inference would become an instance of 'uncertain' *hetu*. But Dharmakīrti rejects this as a special variety of uncertain *hetu*, as Dignāga holds it, and also the Naiyāyikas (specially Uddyotakara's contention of *prakaraṇasama* and also of those who call *prakaraṇasama* as (*satpratipakṣa*) by pointing out that it goes against the law of contradiction. Hence this fallacy, i.e. *prakaraṇasama* (=*satpratipakṣa*), is actually not a special case of fallacious *hetu* at all ; it is just contradictory *hetu*.

Gaṅgeśa[3] meets this contention by pointing out that *satpratipakṣa* actually means that if, at the time of the consideration of a *hetu* which seeks to establish the *existence* of the *sādhya*, there occurs the consideration of another *hetu* which seeks to establish

1. B.F.L. p. 146 ; b. ANB. p. 115 ; c BL. Vol. II, pp. 224-25.
2. ibid. p. 134.
3. H.I.L. p. 439.

the non-existence of that term, the first reason is counterbalanced. For instance one *hetu*—sound is eternal, because it is audible. Opposite *hetu*—sound is non-eternal, becauss it is a product. In the above instances, as consideration of both the sides prevails, there is no real inference. The inference from one *hetu* being of as much force as that from the other *hetu*, the two inferences, says Gaṅgeśa, neutralize each other.

But this argument does not give us new insight. Whatever he argues is the same as already discussed in the context of Dignāga's contention of uncertainty, in which, he discussed *satpratipakṣa* as a special case of uncertainty. Dharmakīrti rejects this by pointing out that at the time t_1 if £ is a $\vdash$, $\sim$£ is not $\vdash$; or if £ is a $\vdash$, β is not $\vdash$. Hence it is not possible to hold these two at the same time. Thus it is not an independent fallacy at all.

CHAPTER VII

KĀLĀTĪTA (*BELATED OR MISTIMED*) *HETU*

Gautama defined[1] the *Kālātīta* (belated or mistimed) *hetu* which, as adduced, is behind time. Vātsyāyana makes it clear[2] by pointing out that when one factor of the thing adduced as *hetu* is found to be affected by lapse of time, it is said to be adduced behind time ; and it is then called belated (*kālātīta*).

Now consider the following argument : "Sound is eternal, because it is manifested by conjunction, like colour. The colour that is manifested by the conjunction of light with the jar is one that was in existence before, as well as after its manifestation. Similarly, the sound also that is manifested by the conjunction of the drum and the stick, or by the conjunction of the wood and the axe, is one that is in existence before and after its manifestation. So that, being manifested by conjunction, sound must be regarded as eternal." This is not a valid *hetu*, because when adduced, it is behind time.

It is clear from the above passage and from the explanation of the *kālātīta hetvābhāsa* as given here and in the *vārtika*, that the conception of this fallacy has undergone a complete change at the hands of the later logicians. The latter regard that *hetu* as *kālātyayāpadiṣṭa* which is found to be opposed to a well-ascertained fact ; when, for instance, the coolness of fire is adduced as *hetu*. In accordance with this view they have given to their fallacy the name of *bādhita* (annulled). While what Vātsyāyana means is that we have the *kālātīta* hetvābhāsa when one part of the *hetu* is found to be such as is not true at the time in connection with which it is put forward ; e.g. manifested by conjunction, as adduced to prove the eternality of sound, is found to be a *hetu*

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1. NS 1.2.9.
2. NBh. 1.2.9.

of which one part, conjunction, is not present at the time that sound appears, though it was there before that appearance. So that it is behind time, belated. The name *kālātīta* can rightly be applied to only this. The *bādhita* of the moderns was never true. So that the name belated cannot apply to it. With a view to meet this discrepancy between the two views, the *Tātparyaṭīkā* has adopted the method of a very forced interpretation of Vātsyāyana. It says that the opening sentence of Vātsyāyana's *Bhāṣya* stated both the views—the *svamata*, his own view as also the *paramata*, the view of others The *Tātparya* takes care to brand what clearly is the *Bhāṣya* view as *paramata*, and the modern view as *svamata* : and it gets the two views out of the meaning of the word *artha* (thing) in the *Bhāṣya.*

According to the view of the *Tātparya*, thing stands for the subject (*pakṣa*) of the proposition, in which the *hetu* should subsist; and the subject (*pakṣa*)—like every other thing—has two factors—the quality—is found to be affected by lapse of time, we call it belated (*kālātīta*). For example, when coolness of fire is urged as proving its eternality, we find that the *coolness*, which is adduced as a quality of the subject (*pakṣa*), fire, is belated, because its contrary has been already definitely ascertained. By the view of *Bhāṣya* itself the thing is the *hetu* itself ; and it is called belated, when not the whole of it, but only a part of it is found to be *behind* time ; as in the case of the *hetu* manifested by conjunction where it is found that though the manifestation is true, the *conjunction* has passed off when the sound appears. And when the *Tātparya* finds the example given in the *Bhāṣya* not fitting in with its own view, it seeks to meet this difficulty by saying that the example according to the true view has not been given in the *Bhāṣya*, because several examples of it have already been given ; for instance when it has been said that no conclusion can be deduced from what is contrary to well-ascertained facts of perception or to scripture. So that the *Bhāṣya* cites on example only according to the *paramata*. This method, however, is not quite in keeping with the practice of the *Bhāṣya*. All *Bhāṣyas*—that of Vātsyāyana among them err more on the side of diffuseness than of conciseness.

The *Bhāṣya* view really does not lend support to the modern view of the fallacy of *bādha*. If only *a part* of the *hetu* is behind time, it cannot be said to be contrary to, and hence *annulled* by, well ascertained facts of perception etc. . So in order to remove this difficulty, the *Tātparya* aas taken the term one part of the *Bhāṣya* to refer to the subject (*pakṣa*), and not to *hetu*. As regards the objection that might be urged against the *Bhāṣya*, that it does not—if its own explanation of the *Sūtra* is accepted—mention the annulled (*bādha*) at all among the *hetvābhāsa*,—it has to be borne in mind that a true *hetvābhasa* is that which has some semblance of being a valid *hetu*, and as a matter of fact, anything so absurd as the *coolness of fire* cannot be said to have any semblance to a *sad-hetu*. Again, it has to be borne in mind that we can apply the term behind time or belated to only what was true before, but is nor true at the time in connection with that with which it is adduced ; and this also can never apply to anything so absurd as coolness of fire. So that the modern view would appear to be unsupported, not only by the *Bhāṣya* and the *Vārtika*, but also by *Sūtra*.

Now we can say that in the case of colour, the time at which the manifesting conjunction appears does not go beyond (i.e. does not differ from) that at which the manifested colour exists. As it is only during the time at which the conjunction of the light and jar is present that colour is perceived; while colour is not perceived when the conjunction has ceased to exist The case of sound, however, is entirely different For instance, it is only after the conjunction of the drum and stick has ceased that sound is heard by the man at a distance, as I already pointed. In fact, it is heard at the time of the *disjunction*, i.e. at the time that the stick has ceased to touch the drum. So that the manifestation of sound is beyond the time of the conjunction ; and as such it cannot be *caused* by that conjunction The reason behind that is a rule ; when the *cause* has ceased to exist, the *effect* does appear. So that if conjunction were the cause of the manifestation of sound, the latter should cease after the former has ceased. Thus then, it is found that what is adduced as the *hetu* is not similar to the example ; and as such it cannot prove the proposition. Hence it is a *hetvābhāsa*.

The *Tātparya* remarks that the *hetvābhāsa*, as above explained, would only be a form of the *unknown hetu* and as such the belated should be the same as the unknown. In fact, even though this objection should have been brought forward by the *Bhāṣya* in the explanation provided but it did not think it worth while to urge it. But we have to remember that the *kālātīta* as explained by the *Bhāṣya*, is not included in any of the three kinds of unknown, as I already discussed, accepted by the older logicians (*svarūpāsiddha*, *āśryāsiddha* and *anyathāsiddha*) it falls under what the later logicians have called the *bhāgāsiddha*, the partly unknown, of which however no mention is found either in the *Bhāṣya* or in the *Vārtika*.

The Buddhist logicians have defined the *kālātīta hetu* as that which is adduced at a time other than that at which it should be adduced, e.g. when one party has urged the reasoning simply as sound is eternal, like the jar, and he adduced, as the Naiyāyika points out, the *hetu*, because it is a product, only after he has been asked why ? Having thus explained and exemplified the Sūtra—the Buddhists have found fault with it as follows :

The question—why ?—that the opponent puts—is it put *after* the first party has completed his say, or before that ? If the former, then the first party is open to the clincher (*nigrahasthāna*) of 'deficiency' ; his reasoning being *deficient* in that it does not state the *hetu* at all, and hence it cannot be a case of *hetvābhāsa* being urged. If, on the other hand, the question is put *before* the first party has completed his say, then the *hetu* does not cease to be truely valid *hetu*, simply because it is urged after some time. If it fulfills all the conditions of the *sad-hetu*, it does not lose its validity simply because of the interruption by the over-zealous opponent. This is met by the *Bhāṣya* by rejecting the suggested interpretation of the *Sūtra*.

Vātsyāyana points out that the *Sūtra* does not mean that 'belatedness' consists in the reasoning of the order of the 'Factors of Reasoning'. Why ? Because we have the general law that—when one thing is by its inherent capability connected with another thing, the connection subsists also when they are remote from one another, and on the contrary, when the two things are not

connected at all, mere proximity is ineffective. According to this law even when the *hetu* is stated in an order other than the usual one, it does not lose its character of the *hetu*—which consists in its similarity (*sādharmya*) or dissimilarity (*vaidharmya*) to the example.[1] And so long as it does not lose the character of the *hetu*, it cannot be called a *hetvābhāsa*. Further, the reversing of the order of the factors is what has been stated[2] as constituting the *clincher* of *inopportune*. So that if the same were mentioned here as a *hetvābhāsa*, that would be needless and the *Bhāṣya* did not think it worth while to urge it. But we have to remember that the *kālātīta* as explained by the *Bhāṣya*, is not included in any of the three kinds of unknown; as I already discussed, accepted by the older logicians. One may therefore say that it was not what the *sūtra* meant.

The examples of *bādha* by the more authoritative contrary cognition of the subject are supplied by the *Pariśuddhi*—(1) The jar is all pervading, because it is an entity, *like ākāśa*—when the all-pervadingness of the jar is opposed to what we know of the jar by perception. (2) The atom is made of component parts, because it is corporeal, like the jar,—where the conclusion is opposed to what we know of the atom by inference. (3) The Meru consists of stone, because it is a mountain, like the *Vindhya*,—where the conclusion is opposed to what we know of the Meru from the scriptures. The following is an example of the *bādha* of the conception of the *hetu* as adduced—'water and air are hot, because the touch of air being different from that of—earth is opposed to our perception ; and so on.

Further we can say that when a *hetu*, a peculiarity of which is separated by the lapse of time, is used as a *hetu* and thus becomes vitiated by the lapse of time, it is called *Kālātīta*, according to Uddyotakara. Uddyotakara provides the same example, which I already mentioned, in which he points out that the violation of the order of mentioning the inference—components is not meant by the *Sūtra*, i.e. the *Sūtra* does not define *kālātīta*

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1. NS. 4.1.34-35.
2. ibid. 5.2.11.

as a *hetu* mentioning the violation of the proper order of mentioning the inference—components, or more specifically a *hetu* mentioned after the exemplification. Why ? He points out that which is connected by import with something else remains so connected in spite of being separated by time. In spite of being mentioned in immediate succession, however, those unconnected by import do not convey any sense. It is due to such a percept, a *hetu*, even when mentioned in violation of the proper order does not surrender its nature of a *sad-hetu*, viz. the characteristic of proving the *sādhya* through *sādharmya* or *vaidharmya* with the instance cited. Since it does not surrender its nature of *sad-hetu* it is not a *hetvābhāsa*. Further, it is said :[1] "The point of defeat (*nigrahasthāna*) called (*aprāptakāla* is the mention of the inference —components in violation of their proper order." Therefore this, i.e. the mention of the inference—components in violation of the proper order, is not the correct meaning of the present *Sūtra* (i.e. defining *kālātīta*), since that makes the other *Sūtra*[2] redundant.

Śāntarakṣita argues that an independent form of *hetvābhāsa* called *kālātīta* is unacceptable. The example of it, as provided by Vātsyāyana, is, as a matter of fact, only a case of the unproved (*asiddha*), because in this example is actually proved that the *hetu* "being manifested through conjunction", does not exist in the subject (*pakṣa*) of inference, viz. "sound". In other words, it corresponds to what is already discussed as *svarūpāsiddha*.

Even later Naiyāyikas, like Jayanta Bhaṭṭa and Vācaspati Miśra, do not accept the example of the kālātīta given by Vātsyāyana. According to Vācaspati, when the absence of the characteristic sought to be proved is already well-established by any other stronger *pramāṇa*, there is no longer any doubt about the presence of the *sādhya* in the *pakṣa* and as such no longer any scope for any *hetu* to prove it. In other words, the time for employing any *hetu* to prove the *sādhya* has elapsed and any *hetu* mentioned after such a lapse of the appropriate time is a case of *kālātīta*. Thus, in short, *kālātīta* means a *hetu* used to prove a

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1. N.S.
2. ibid.

sādhya, the absence of which is already well-proved in the *pakṣa* (subject). Later Naiyāyikas, therefore, use for this *hetvābhāsa* the name '*bādhita*', i.e. contradicted by a stronger *pramāṇa*.

But Dignāga considered '*kālātīta*' or '*bādha*' under '*pakṣābhāsa*'. He defines it as the fallacy of *sādhya*, and it occurs only when it is pointed out in the *sādhya* even before the *hetu* is given. Dignāga mentioned nine varieties of *pakṣābhāsa*. These nine varieties can be divided into two groups viz. '*viruddha*' and '*aprasiddha*' (the contradictories and the unaccepted).[1]

Let us now consider these varieties one by one. Dignāga's classification of *pakṣābhāsa* runs as follows :

A. *Viruddha* (Contradictories).

1. *Pratyakṣaviruddha* (contradicting perception). It occurs only when whatever the object may be if that object runs against the perception, then that object becomes fallacious Consider this example, "Sound is not audible." In this case it is universally recognised that for all X whatever X may be if X is sound, then X is not audible." But it goes against perception. In perception we find that for all X whatever X may be, if X is sound, X is audible."

2. *Anumānaviruddha* (contradicting inference). It occurs when a thesis (=*pakṣa*) contradicts the valid inference. For instance, "a pot is eternal". In this case the example shows that "for all X, if X is f, then X is g". Here f=pot and g=eternal. But this runs against inference and correct inference would be : "A pot is non-eternal",—then "for all X and if X is pot, then, X is non-g", here non-g=non-eternal. Hence "a pot is eternal" is an example of contradicting inference.

3. *Āgamaviruddha* (Contradicting testimony) : This fallacy indicates, as its name shows, that when a thesis (*pakṣa*) is used which contradicts a testimony. In other words, when a *pakṣa* is incompatible with the public opinion, such as "Money is an abominable thing." I or some men like me may say "money is an abominable thing", but the world does not say so. Hence this argument runs against testimony.

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1. NPD. pp. 2-3, NPH. Taisho 1630, p. 11 b-c.

4. *Lokaviruddha* (contradicting convention) : A thesis (=*pakṣa*) incompatible with one's own belief or doctrine, such as : "The *Śaśī* is not the moon". But our convention says that '*Śaśī* means moon'. Hence this argument would be fallacious being contradictory to our convention.

5. *Svavacanaviruddha* (contradicting oneself) : A thesis (*pakṣa*) incompatible with one's own statement, such as : "My mother is barren."

B. *Aprasiddha* : 'the unaccepted'.

6. *Aprasiddhaviśeṣaṇa* (unaccepted predicate) : A thesis with an unfamiliar minor term, such as : A Buddhist against a Sāṁkhya who held the view that when a thing disappears it becomes latent and is not perishable : "Sound is perishable". In this case, 'Sound' is a subject well known to the Mīmāṁsaka, but not to the Sāṁkhya.

7. *Aprasiddhaviśeṣya* (unaccepted subject). A thesis with an unfamiliar major term, such as : A Sāṁkhya against a Buddhist, who rejected the existence of a soul : "The soul is intellect."

8. *Aprasiddhobhaya* (unaccepted both) : A thesis with both the terms unfamiliar, such as : A Vaiśeṣika against a Buddhist, who accepted neither the existence of a soul nor that of a constitutive cause (*samavāyikāraṇa*) : "The soul is a constitutive case."

9. *Prasiddhasambandha* (being pre established) : A thesis universally accepted i.e. the *sādhya* is pointless because it has been accepted universally or at any rate by both the disputing parties. "Fire is warm" or "Sound is audible". These types of *pakṣa* (thesis) cannot be offered for proof, as it is accepted by all.[1]

The first five is a simple contradictory thesis (pakṣa). Dignāga's main emphasis is on 6-9, i.e. '*aprasiddha*'. In this list (7) 'unaccepted subject' was regarded as a fallacy of the *hetu*, as already discussed, in which I pointed out that it may be included in *āśrayāsiddha*, 'being unfounded'.

Although an argument may be vitiated by two or more fallacies occurring together, every fallacy should be independent by

1. H.I.L. pp. 290-91.

itself and should not be compounded in the list of fallacies. In this respect, (8) is the combination of (6) and (7).

Further, we have one variety of *pakṣābhāsa* i.e. *anumāna-viruddha*, which is controvertial. It is objected that when the factor of 'which party' is introduced ; the question 'whose inference is contradicted ?' will be involved : If the inference of the disputant or both parties is contradicted, the syllogism is fallacious. But if the inference of the opponent alone is contradicted, the syllogism is not fallacious.

From the above consideration we can say that "The *sādhya* may contradict the inference either wholly or partially and there are four possible cases each, viz. :

(a) Contradicting, wholly by the disputant but not the opponent. A Vaiśeṣika says : "Inherence (*samavāya*) is not an existence." This school admitted the existence of inherence through inference.

(b) Contradicting, wholly by the opponent but not the disputant. A Hīnayāna Buddhist against a Mahāyāna Buddhist : "*Manas*, i.e. the seventh consciousness, is not an existence." The Mahāyāna Buddhist accepted the existence of *manas* through the inference that the *manovijñāna* (the sixth consciousness) must be based on something, which is *manas* because all the five sensuous consciousness are based on five sense-organs.

(c) Contradicting, wholly, both by the disputant and the opponent. "A pot is permanent", as illustrated in the text.

(d) Contradicting, wholly, neither by the disputant nor the opponent. This is not fallacious because of 'contradicting inference', but is fallacious because of 'being pre-established', because an argument should always involve a disagreement with the opponent.

(e) Contradicting, partially by the disputant but not by the opponent. A Vaiśeṣika against a Buddhist : "None of our six categories are existent." Among the Vaiśeṣika's six categories, five can be known through perception and the last one, inherence, can be known through inference.

(f) Contradicting, partially by the opponent but not the

disputant. A Mahāyāna Buddhist against a Sarvāstivādin : "All the ten sensuous *āyatanas* (five sense-data and five sense-organs) are unreal." The latter considered that all human beings, except the Buddha, can know the existence of the five sense-organs through inference only.

(g) Contradicting, partially by both the disputant and the opponent. A Mīmāmsaka against a Buddhist : "All kinds of sound are permanent". The disputant accepted the permanence of the sound of *Vedas* only but not other kinds.

(h) Contradicting, partially, neither by the disputant nor by the opponent. There is no illustrative case because it is easy.

The above is a rough translation of one passage from the Great Commentary[1] as a specimen of Kuci Chi's treatment of the list of fallacies. Among the eight cases, he considered (b) and (f) as valid, (d) and (h) as fallacious not because of 'contradicting inference' but because of 'being pre-established'. In fact, the case (h) is virtually impossible. Hence being pre-established fallacy of *pakṣābhāsa* can be omitted. Again, *aprasiddhobhaya*, (unaccepted both) is the combination of (6) i.e. *aprasiddhaviśeṣaṇa*, and (7) i.e. *aprasiddhaviśeṣya*.

Hence *aprasiddhobhaya* is superfluous because of unnecessary compounding. Therefore in *aprasiddha* varieties of *pakṣābhāsa*, now we rejected three varieties, i.e. *aprasiddhobhaya* and *prasiddhasaṁbandha* Again I already pointed out that *aprasiddhaviśeṣya pakṣābhāsa* is a fallacy of *hetu*. Then we have only one *aprasiddha pakṣābhāsa*, i e. *aprasiddhaviśeṣaṇa*. But if one *sādhya* is fallacious, then the whole argument would be fallacious. Hence it is not a fallacy at all. Hence Dharmakīrti[2] points out that we have following *pakṣābhāsas* : (a) Contradicting perception, (b) Contradicting inference, (c) Contradicting convention, and (d) Contradicting oneself. Hence we have seen that Dharmakīrti's modification is quite tenable.

Up to now we have seen that if any one of the term in a syllogism belongs to be an empty class, e.g., "A unicorn is wise",

1. NPGC Taisho 1840, p. 114c.
2. N.B. p. 111.

the proposition is neither true nor false, but yields no sense. A syllogism with such *sādhya* is valid. The problem of being empty or not is not always so obvious as the existence of a unicorn or a cast. In philosophical debates the existence of an entity is not frequently questioned. When the existence of an entity expressed by a term in a syllogism is not agreed by two disputing parties, the controversy will be shifted from the *sādhya* to the problem of existence of an entity. Therefore the syllogism is considered as invalid.

However, the above improvement is still not precise enough, because in a philosophical debate, the existence of an entity can hardly be unanimously agreed to by all the schools. Moreover, in a debate the main aim, as I already pointed out in the beginning, to convince the opponent. Therefore it is the opinion of the opponent and not that of the general public that matters. The third alternative is accepted by both, i.e. being accepted by the disputant only, being accepted by the opponent only. So we have the fourth alternative i.e. both rejected. Therefore, we have four alternatives viz. (1) accepted by disputant ; (2) accepted by opponent ; (3) accepted by both ; and (4) rejected by both.[1]

Furthermore, the scope of 'empty class' becomes wider. Generally it means : (1) classes of things which are factually non-existent, such as 'hare's horn' whose non-existence is universally known ; (2) classes of things which are logically impossible, such as 'barren woman's son : Now two more meaning are added : (3) classes of things which are not accepted by a disputing party, such as 'God' to an atheist ; (4) Classes of things which are unfamiliar to a disputing party, such as technical terms to a non-specialist.[2]

From the above consideration, we can conclude that a general principle given in the fallacies of 6, 7 and 8 of *pakṣābhāsa* by Śaṁkarasvāmin is that if either the major or the minor term is unaccepted by either one party or by both the parties, the syllogism will be considered as invalid. In other words, both terms should

1. NPGC Taisho 1440, p. 115a.
2. ibid.

be agreed by both the parties as non-empty. This rule was neither advocated by Dignāga nor by Dharmakīrti, but it was supported by Kuci Chi, of whose own system, the treatment of the empty classes is a characteristic feature.[1]

A further point has to be considered. Even when a term is familiar to and accepted by both the parties, it may mean one thing to one party and something different to another party, because it may be defined differently either in *intension* or in extension. In this case, a phrase, "according to an interpretation accepted by both the parties .."should be added".

Moreover, one term may have different interpretations on different occasions even if it is used by the same man. Under such condition a qualifying phrase, such as, "in its conventional sense" or "in its absolute sense" should be added.

All these should be settled at every stage of the argument. The point of controversy will be one and only one without being diverted to the problem of empty classes of difference in interpretation. Hence Dharmakīrti was right when he reduced nine varieties into four.

To sum up : In this section we find two views : (1) The Naiyāyika view and (2) the Buddhist view. The former holds it a fallacy of a *hetu* but the latter finds out that it is not a fallacy of a *hetu* but a fallacy of *pakṣa*. I find that the latter's position is more sound than that of former on the basis of the whole consideration, because if a *hetu* is used in the sense of f at t1, which is to be considered to be valid one at t1 in the sense of f but at t2 I find that a *hetu* which was used previously defective, then, however, we decide which *hetu* was the correct one, i.e. which was used either at t1 or t2 ; hence the Naiyāyika's contention does not hold good. It holds good if, we recognise *kālātīta* not as *hetvābhāsa* but as *pakṣābhāsa*.

Let us now consider Gaṅgeśa's view. He holds that a *bādhita* occurs when there is the knowledge that the *sādhya*, which is assigned to the *pakṣa*, does not really abide in it.[2] He provides ten varieties of *bādhita*. These are as follows :

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1. NPGC Taisho.
2. HIL. p. 440.

1. The minor term (*pakṣa*) being incompatible, with perception (*Pakṣaḥ Pratyakṣa-bādhitaḥ*), e.g. "a pot is all-pervading because it is existent."

2. The minor term (*pakṣa*) being incompatible with inference (*pakṣaḥ anumāna-bādhitaḥ*), e.g. an atom has parts, because it has a shape".

3. The minor term being incompatible with verbal testimony (*Pakṣaḥ śabda-bādhitaḥ*) e.g. the golden mountain (*Meru*) is stony, because it is a mountain "

4. The minor term being incompatible with perception which establishes the counterpart of the major term (*pakṣaḥ sādhya-pratiyogi-pratyakṣa-bādhitaḥ*), e.g. 'Fire is non-warm, because it is a product."

5. The minor term being incompatible with inference which establishes the counterpart of the major term, (*pakṣaḥ sādhya-pratiyogyanumāna-bādhitaḥ*). e.g. "Sound is inaudible, because it is a quality (of ether)."

6. The minor term being incompatible with comparison which establishes the counterpart of the major term (*pakṣaḥ sādhya-pratiyogupamāna-bādhitaḥ*) e.g. "*Bosgavaeus*-ness is not the connotation of the term *Bosgavaeus*, because it is a general notion.

7. The minor term being incompatible with the evidence which is analogous to the evidence that establishes the major term (*pakṣaḥ sādhya-grāhaka-pramāṇa-jātiya-pramāṇa-viruddha*), e.g. "The skull of a deceased person is pure because it is the limb of a being that had life, as a conch-shell." In this context, actually the scripture declares a conch-shell to be pure but not the skull of a deceased person.

8. The minor term being incompatible with perception which establishes the middle-term (*pakṣaḥ hetu-grāhaka-pratyakṣa-bādhitaḥ*) e.g. "Water and air are warm, because they are possessed of touch, unlike that of the earth."

9. The minor term being incompatible with inference which establishes the middle term (*pakṣaḥ hetu-grāhaka-numāna-bādhitaḥ*), e.g. "The mind is all pervading, because it is a seat of union which is a non-coexistent cause of knowledge."

10. The minor term being incompatible with verbal testimony which establishes the middle term (*pakṣaḥ hetugrāhaka-śabda-bādhitaḥ*), e.g. "The Rājasūya sacrifice should be celebrated by *Brāhmaṇas*, because it is the means of conquering heaven." From verbal testimony the *Rājasūya* sacrifice is ascertained to be a duty of the *Kṣatriyas* and not of the *Brāhmaṇas*.

Gaṅgeśa's[1] explanation shows nothing that *bādha* is a fallacy of *pakṣa*. He tries to show that *pakṣa* plays a key-role as a part of *anumāna*, and all action helds on *pakṣa* ; again with the help of *sādhya* and *hetu* he tries to focus that when *pakṣa* is incompatible with either *sādhya* or *hetu*, then it is known as *bādhitattva*. When everything is related to *pakṣa*, then how is it bādhitva ? In other words, we can say that if everything is related to *pakṣa* either in relation to *sādhya* or in relation to *hetu*, then is it not a *pakṣābhāsa* ?

Further, I find that Gaṅgeśa's explanation is not new for us. I find that the ten varieties of *pakṣābhāsa* are very close to Dignāga's nine varieties of *pakṣābhāsa*. Gaṅgeśa's classification can also be reduced into four, as Dharmakīrti did.[2] Dharmakīrti was extremely right when he classified *pakṣābhāsa* into four viz. contradicting perception, contradiction inference, contradicting testimony and contradicting one's own. These four can be extended upto either nine or ten as Dignāga and Gaṅgeśa did, respectively.

It may be noted in this connection that time as a factor influencing *anumāna* takes away universality from inference. What may be true today may not be so tomorrow. At least this is the impression that one gets from early texts of Nyāya. This was soon realized and then the emphasis shifted from time to *bādha* or contradiction in relation to *pakṣa*. The only point of dispute which may have any philosophical interest is with regard to the question whether, if *pakṣa* is incompatible either with *sādhya* or with *hetu*, the *pakṣa* is fallacious or is it a fault of *hetu*. The Buddhists held the former position but the Nyāya held the latter but with some reservation ; more for the sake of maintaining their identity against the Buddhists than for any cogent reason.

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1. HIL.
2. BFL. p. 146.

CHAPTER VIII

CONCLUSION

We have seen upto now that there are two major trends, in the history of Indian logic, i.e. those of Nyāya and Buddhism, regarding *hetvābhāsa.* Nyāya accepts five *hetvābhāsa*, on the basis of its own conception of hetu, consisting in *avyabhicaritatva.* Hence for Nyāya the primary *hetvābhāsa* is *savyabhicāra* (or *anaikāntika*). On the other hand, the Buddhist accepts three *hetvābhāsa*, on the basis of his own idea of *hetu* as *avinābhāva.* Hence for the Buddhist the primary *hetvābhāsa* is *viruddha* (contradictory). Again, we find that for Nyāya *savyabhicāra* (=*anaikāntika*) is directly or indirectly related to remaining four *hetvābhāsas.* On the other hand, we find that for the Buddhist *viruddha* is directly or indirectly related to remaining two *hetvābhāsas*, we may try to see how this surmise can be supported.

Following Uddotakara *savyabhicāra* has allready been formalized in two ways as follows :

A. The *first* way runs as :

Sādhyavyāpaka (PaH)=~(Ex) (fx.~gx). (Ex) (fx.gx)

Sapakṣāvṛtti (SeH)= (Ex) (~fx.hx.~gx) .~ (Ex) (~fx-hx.gx)

Avidyamānavipakṣa (VyH) =~(Ex) (~hx.gx)~(Ex)(~hx.-~gx)

If we combine them, the whole formula runs as follows :

(PaH). (SeH). (VyH)=(~(Ex) (fx.~gx). (Ex) (fx.gx)). ((Ex) (~fx.~hx.~gx) .~(Ex) (~fx hx.gx)).(~(Ex) (~hx.gx) .~(Ex) (~hx.~gx)))

"(PaH). (SeH). (VyH)" can be deleted by the *Law of Equivalence.*

For the simplicity by the law of E.I. we can remove existential quantifier. Then we have,

(~E (f ~g) .E (f.g)). (E) (~f.h.~g) .(~E (~f.h.g)).(~E(~.-h.g)~E(~h.~g.)))

By applying the Law of Association, we can remove brackets.

(~E) (f.~g) .E (f.g): .E(~f.h.~g) ~E(~f.h.g) .~E(~h.g) .~E (~h.~g) [N-la]

B. The *second* way runs as follows :

Sādhyavyāpaka (PaH)=~(Ex) (fx.~gx) .(Ex) (fx.gx);

Avidyamānasapakṣa (SyH)=~(Ex) (~fx.hx.gx) .~(Ex) (~fx.hx.~gx)

Avidyamānavipkṣa (VyH)=~(Ex)(~hx.gx).~(Ex)(~hx.~gx)

We combine them as follows :

(PaH).(SyH).(VyH)={(~(Ex)(fx.~gx) . (Ex) (fx . gx)}.
{~(Ex)(~fx.hx.gx).~(Ex)(~fx.hx.~gx)}
(~(Ex)(~hx.gx).~(Ex)(~hx.~gx))

"(PaH) (SyH).(VyH)" can be deleted by the Law of *Equivalence.* Again, by applying E I., we have,

{(~(f.~g).E(f.g) ((~E(~f.h.g).(~f.h.~g)).(~E(~h.g.).
~E(~h.~g)}.

Further, by applying the *law of Association,* we have (~E(f.~g). E(f.g).~E(~f.h.g).E(~f.h.~g).~E(~h.g).~E(~h.~g)) [N–lb]

To sum up :

(N–la) (~E(f.~g) .E(f.g) .E(~f.h.~g) .~E(~f.h.g) .~E(~h.g).
~E(~h.~g)).

(N–lb) (~E(f.~g).E(f.g).~E(~f.h.g).~E(~f.h.~g) .~E(~h.g).
~E(~h.~g)).

Now let us see how these two formulae of *savyabhicāra* are related to remaining four *hetvābhāsas.* For this purpose, let us now consider Uddyotakara's formulation of *Viruddha* hetvābhāsa. Like *savyabhicāra,* Uddyotakara gave two formalizations of *viruddha,* as I already formalized them in two ways as follows :

The *first* way of the *viruddha hetvābhāsa* runs as follows :

Sādhyavyāpaka (PaH)=~(Ex)(fx ~gx).(Ex)(fx.gx);

Avidyamānasapakṣa (SyH)=~(Ex)(~fx.hx.gx).~(Ex)(~fx.hx.~gx)

Vipakṣavyāpaka (VaH)=~(Ex)(~hx.~gx).(Ex)(~hx.gx)

Now full formula runs as follows :

$$(PaH).(SyH).(VaH)=((\sim(Ex)(fx.\sim gx).\ (Ex)(fx\ gx)).(\sim(Ex)$$
$$(\sim fx.hx.gx)\sim(Ex)(\sim fx.hx.\sim gx\ ).$$
$$(\sim(Ex)(\sim hx.\sim gx).(Ex)(\sim hx.gx)).$$

"(PaH).(SyH).(VaH)" can be deleted by the *law of Equivalence.*

By applying the rule of E.I., we have,

$$((\sim E(f\ \sim g).E(f.g)).(\sim E(\sim f.h.g).\ \sim E(\sim f.h.\sim g)).(\sim E(\sim h.\sim g).$$
$$E(\sim h.g.))$$

Again we apply the *Law of Association,* then we have, $(\sim E(f.\sim g).E(f\ g).\sim E(\sim f.h.g).\sim E\sim(f.h.\sim g).\sim E(\sim h.\sim g).\ E(\sim h.g))$

(N—2a)

Let us now consider the second way of *Viruddha hetvābhāsa* which runs as follows :

Sādhyavyāpaka $(PaH)=\sim(Ex)(fx.\sim gx).(Ex)(fx.gx);$

Avidyamānasapakṣa $(SyH)=\sim(Ex)\ (\sim fx\ .\ hx\ .\ gx).\ \sim(Ex)$
$(\sim fx.hx.\sim gx);$

Vipakṣaikadeśavṛtti $(VuH)=(Ex)(\sim hx.\sim gx).(Ex)(\sim hx.gx)$

If we combine them, then, we have,

$$(PaH).(SyH).(VuH)=((\sim(Ex)(fx.\sim gx).(Ex)(fx.gx)).(\sim(Ex)$$
$$(\sim fx.hx.gx).\sim(Ex)(\sim fx.hx\sim gx)).$$
$$((Ex)(\sim hx.\sim gx).(Ex)(\sim hx.gx)).$$

"(PaH).(SyH).(VuH)" can be deleted by the *Law of Equivalence.*

By applying the rule E.I. we have,

$$((\sim E(f.\sim g).\ (f.g)).\ (\sim E(\sim f\ \ h.\ g).\ \sim E(\sim f.\ h.\ \sim g))\ (E\ (\sim h.\ \sim g).$$
$$E(\sim h.g))$$

Again we apply the *Law of Association* we have :

$$(\sim E(f.\sim g).E(f.g).\sim E(\sim f.h.g).\sim E(\sim f.h.\sim g)\ .E(\sim h.\sim g).E(\sim h.g))$$

[N-2b]

In short, we can say that Uddyotakara's two formulae of *viruddha hetvābhāsa* run as follows :

(N—2a) $(\sim E\ (f.\ \sim g)\ .\ E(f.\ g)\ .\ \sim E\ (\sim f.\ h.\ g)\ .\ \sim E\ (\sim f.\ h.\ \sim g).$
$\sim E(\sim h.\sim g).E(\sim h.g))$

(N—2b)$(\sim E(f.\sim g).\ E(f.g).\sim E(\sim f.h.g).\sim E(\sim f.h.\sim g).\ E(\sim h.\sim g).$
$E(\sim h.g))$

Now let us compare these two formulations of *Viruddha* with the two formulations of *Savyabhicāra.* For the sake of clarity, we put the set of the formula of *Savyabhicāra,* and by denying them we compare the set of *viruddha.*

(N−1a) (~E(f.~g).E(f.g). ~E(~f.h.~g).~E(~f.h.g).~E(~h.g). ~E(~h.~g)).

(N−1b) (~E(f.~g). E(f.g). ~E(~f.h.g). E(~f.h.~g). ~E(~h.g). −E(~h.~g)).

For the sake of comparison, now, suppose we deny (N la). ~(~E(f.~g) . E (f.g) . E (~f.h.~g) . ~E (~f.h.g) . ~E (~h.g). ~E(~h.~g))

Then by applying *DeMorgan Law*

= (~ ~ E(f.~g) V~E(f.g) V~E (~f.h.~g) V~ ~E (~f.h.g) V~E(~h.g) V~ ~ E(~h.~g))

And also applying the Law of *Double Negation*, we have =E(f.~g) V~E(f.g) V~E (~f.h.~g) VE (~f.h.g) V E(~h . g) VE(~h . ~g))

Now we have one more formula of *Savyabhicāra*. i.e. (N−1a') (E (f.~g) V~E (f.g) V~E (~f.h.~g) VE (~f.h.g) VE (~h.g) VE (~h. ~g))

Let us now deny (1b)

~(~E(f . g) E(f.g) . ~E(~f.h.g) . ~E~f. h. ~g) . ~E(~h. g) . ~E(~h.~g))

With the help of *DeMorgan Law* we have.

(~ ~E(f.~g) V~E(f.g) V~ ~E (~f. h. g) V~ ~E(~f . h . ~g) V~ ~E(~h. g) V~ ~E(~h. ~g))

Now with the help of the *Law of Double Negation*, we have, =(E(f. ~g) V~E(f.g) VE (~f.h.g) VE (~f. h. ~g) VE (~h.g) VE (~h. ~g))

Again, we have another formulation of the *viruddha* with the denial of *Savyabhicāra* of (N−1b)., viz.

(N−1b) E (f.~g) V~E (f.g) VE (~f.h.g) VE (~f.h.g) VE (~h.g) VE(~h.~g)).

In this way we get another set of *viruddha*, Viz. (N—1a') and (N−1b').

Now we compare (N−1a') with (N−2a) and (N−1b') with (N−2b).

Let us compare the first (*N—1a'*) *with* (*N—2a*) :

Let us see by the truth-matrix whether (N—1a') implies in (N—2a) or (N—2a) implies in (N—1a') and *vice versa.*

((E(f.~g)V~E(f.g)) V~E(f.h.~g))V(E(~f.h.g)VE(~h.g)VE(~h.~g))

F T F F F T T T T F T F T F F T F F F F T F F F F
F T F F F T T T T F F F T F F F T T T T T T F T F
T T T T T T F T T F T T T F F T F F F F F F F F T
T T T T T T F T T F F T T F F F F F F T F T T T T
F F F T T F T T T F T F T T T T T T F F T T F F F
F F F T T F T T T T F F T F T F T T T T T T F T F
F F T T T F F T F T T T T F T T F F F F F F F F T
F F T T T F F T T T F T T F T F F F F T F T F T T

[N—2a]

((~E(f.~g).E(f.g)).~E(~f.h.~g)). (~E(~f.h.g)~E(~h.~g).E(~h.g))

T T F T T T T T T F T F F T F T T T T F F F F F T
T T F T T T T T T F F F T T F F T T T T F T T T T
F T T F F T F F T F T T F T F T F T T F T F F F F
F T T F F T F F T F F T F T F F F F F T T F F T F
T F F F F F T F T T T F F F T T T F T F F F F F T
T F F F F F T F T T F F F T T F T T T T F T T T T
T F T F F F F F F T T T F T T T F T T F T F F F F
T F T F F F F F T T F T F T T F F F F T T F F T F

Let us compare the values of both the main connectives, i.e. the main connectives of (N—1a') and (N—2a)

(N—1a')	⊃	(N—2a)
T	F	F
T	T	T
T	F	F
T	F	F
T	F	F
T	F	F
T	F	F
T	F	F

Now we can say that (N−1a') $\not\supset$ N−2a).

Let us see whether (N—2a) implies (N−1a') or not.

(N−2a)	⊃	(N−1a')
F	T	T
T	T	T
F	T	T
F	T	T
F	T	T
F	T	T
F	T	T
F	T	T

Now we can say that (2a) ⊃ (1a').

Let us now compare (N—1b') with (N−2b).

(N—1b') ((E(f.∼g)V∼E(f.g)) V E(∼f.h.g)) V(E(∼f h,∼g) V E(∼h.g) V E(∼h.∼g)

F T F F F	T	T F F F T T	F F F	T	F F F F T F F F F
F T T T T	T	F T F F T F	T F F	F	F T T T T T F T F
T T T T T	T	F T F F T F	T F F	T	T F F F F F F F T
T T T T T	T	F T F F F F	T F F	F	T F F T F T T T T
F F F T T	F	T T T T T T	T F T	T	F F F F T F F F F
F F F T T	F	T T F T F T	T F T	F	F T T T T T F T F
F F T T T	F	F T F T T F	T T T	T	T T F F F T F F T
F F T T T	F	F T F T F F	T F T	F	T F F T F T T T T

implies

(N−2b) ((∼E (f. ∼g) .E(f. g)) .∼E (∼f. h. g)). ((∼E (∼f. h. ∼g) .E(∼h.∼g)) .E(∼h.g))

T T F T T T T	T T	F T T	F	T	F T F	F F F F	F F F T
T T F T T T T	T T	F F T	F	T	F F F	F F T F	F T T T
F T T F F T F	F T	F T F	F	T	F T T	F F F T	F F F F
F T T F F T F	F T	F F F	F	F	F F T	T T T T	F F T F
T F F F F F T	F F	T T T	F	T	T T F	F F F F	F F F T
T F F F F F T	F T	T F T	F	T	T F F	F F T F	F T T T
T F T F F F F	F T	T F F	F	F	T T T	F F F T	F F F F
T F T F F F F	F T	T F F	F	T	T F T	T T T T	F F T F

Now compare the values of both, i.e. (N--1b') and (N-2).

(N—1b')	⊃	(N—2b)
F	T	F
T	F	F
T	F	F
T	F	F
T	F	F
T	F	F
T	F	F

This shows that (N—1b') ⊅ (N—2b).

Let us see whether (N—2b) implies (N—1b') or not.

(N—2b)	⊃	(N—1b')
F	T	F
F	T	T
F	T	T
F	T	T
F	T	T
F	T	T
F	T	T
F	T	T

This shows that (N—2b) ⊃ (N—1b').

The whole discussion shows that Uddyotakara's formalizations of *Viruddha*, viz. (2a) and (2b), merged in the denial of the formalizations of *Savyabhicāra*, viz. (N—1a') and (N—1b') but not *vice versa*.

Again, we find that the denial of (N—1a) becames valid which is just opposite to (2b), i.e. invalid in all conditions. Further, we find that the denial of (N—1b') becomes invalid because only in first row it has F(=false) otherwise in all conditions (=rows) it has T (true); on the other hand in (N—2a), we find that only in second row it has T(=true) and in remaining rows it has F (=false). The

difference between (N—1b') and (N—2a) is : while the former (N—1b') contains only one F (i e. in first row), the latter (N—2a) contains only one T (i e. in second row). Unless (N—1b') is opposite to (N—2a).

The whole discussion shows that Uddyotakara's two formalizations of *Savyabhicāra* are directly related to his own two formalizations of *Viruddha*.

Now let us see the next *hetvābhāsa* i.e. *Prakaraṇasama*. Uddyotakara points out that an object possesses more than one property, say h and h'. Let U $(f \supset h)$ and $(f \supset h')$ be the views held by the opponent. The disputant must find a property g, such that $(g \supset \sim h)$ and $(\sim g \supset \sim h')$. It is not necessary to have the acceptance of the opponent that $(f \supset g)$.

Let us now consider the possibilities which run as follows :

A. *Considering* $U(f \supset g)$ (i.e. $= \sim E(f.\sim g)$

(i) $U(f \supset g).\ U(g \supset \sim h) \supset U(f \supset \sim h)$

or

$\sim E(f\ \sim g).\ \sim E(g.h) \supset \sim E(f.h)$

(ii) When both (i.e. Opponent and disputant) agreed on $U(g \supset \sim h)$

or

$\sim E(g.h)$

(iii) From (i) and (ii) we have

$U(f \supset h) \supset U(f \supset \sim h)$

or

$\sim E(f.\sim h) \supset \sim E(f.h)$

(iv) When the disputant disagreed and opponent agreed on $U(f \supset h)$

or

$\sim E(f.\sim h)$

(v) From (iii) and (iv) we have

$U(f \supset g) \supset U(f \supset h).\ U(f \supset \sim h)$

or

$\sim E(f.\sim g) \supset \sim E(f.\sim h).\ \sim E(f.h)$

(vi) $U(f \supset g) \supset \sim E(E(f)$

or

$\sim E(f. \sim g) \supset \sim E(f)$

B. *Considering* $U(\supset \sim g)$ or $\sim E(f.g)$

(i) $U(f \supset \sim g).\ U(\sim g. \supset \sim h') \supset U(f \supset \sim h')$

or

$\sim E(f.g).\ \sim E(g.h') \supset \sim E(f.h')$

(ii) When both agreed on

$U(\sim g \supset h')$

or

$\sim E(\sim g.h')$

(iii) From (i) and (ii), we have

$U(f \supset \sim g) \supset U(f \supset \sim h')$

or

$\sim E(f.g) \supset \sim E(f\ h')$

(iv) When disputant disagreed and opponent agreed on

$U(f \supset h')$

or

$\sim (E(f. \sim h')$

(v) From (iii) and (iv), we have

$U(\supset \sim g) \supset U(f \supset h').U(f \supset \sim h')$

or

$\sim E(f.g) \supset \sim E(f. \sim h').\sim E(f.h')$

(vi) $U(f \supset \sim g) \supset \sim E(f)$

or

$\sim E(f.g) \supset \sim E(f)$

However, A and B are not exhaustive, as $U(f \supset g)$ or $\sim E(\supset \sim g)$ is not equivalent to

$\sim U(f \supset g).\ U(f \supset g)$ and $U(f \supset \sim g)$

or

$E(f.g).\sim E(f. \sim g)$ and $\sim E(f.g)$

may be both true or both false, therefore, two more possibilities have to be considered :

C. *Considering* $U(f \supset g)$ and $U(f \supset \sim g)$, or $\sim E(f.\sim g)$ and $\sim E(f.g)$ as both true :

(i) $U(f \supset g).U(f \supset \sim g) \supset \sim E(f)$

or

$\sim E(f.\sim g).\sim E(f.g) \supset \sim E(f)$

D. *Considering* $U(f \supset g)$ and $U(f \supset \sim g)$

or

$\sim E(f.\sim g)$ and $\sim E(f.g)$

as *both false* :

(i) $\sim U(f \supset g) .\sim U(f \supset \sim g) \supset E(f.\sim g).E(f.g)$

or

$E(f.\sim g). E(f\ g) \supset E(f.\sim g).E(f.g)$

The disputant must find reason to prove that the alternative D is impossible, otherwise the argument will be inconclusive (*Savyabhicāra*)

Now, let us see how *Savyabhicāra* implies *Prakaraṇasama.* For this purpose, let us construct truth table of *prakaraṇasama*

(N−3) $(\sim E(f.\sim g).\sim E(g.h) \supset \sim E(f.h)).(\sim E(f.g).\sim E(\sim g.h') \supset \sim E(f.h'))$

Let us apply truth matrix :

$(\sim E\ (f.\sim g).\sim E(g.h) \supset \sim E(f.h)).(\sim E(f.g)\ \ \sim E\ (\sim g.h') \sim E(f.h'))$

T	TF	FF	TTTFTT	TF	TTFT	FT	TFTT
T	TF	TT	TFTTTF	TF	TTFT	FF	TTTF
F	TT	FT	FTTFTT	TT	TFFF	TT	TFTT
F	TT	FT	FFTTTF	TT	TFTT	TF	TTTF
T	FF	FF	TTTTFT	TT	FTTT	FT	TTFT
T	FF	TT	TFTTFF	TT	FTTT	FF	TTFF
T	FT	TT	FTTTFT	TT	FFFF	TT	TTFT
T	FT	TT	FFTTFF	TT	FFTT	TF	TTFF

We already have the truth-value of the denial of the *Savyabhicāra*, i.e. (N – 1a') and (N – 1b')

Truth-Value of (N—1a')	⊃	*Truth Value of (N—3)*
T	T	T
T	T	T
T	T	T
T	T	T
T	T	T
T	T	T
T	T	T
T	T	T

This shows that (N—1a') ⊃ (N—3) and vice-versa.

Truth-Value of (N—1b')	⊃	*Truth-Value of (N—3)*
F	T	T
T	T	T
T	T	T
T	T	T
T	T	T
T	T	T
T	T	T
T	T	T

This shows that (N—1b') ⊃ (N—3)

Let us see whether (N—3) implies (N—1b').

Truth value of (N—3)	⊃	*Truth-Value of (N—1b')*
T	F	F
T	T	T
T	T	T
T	T	T
T	T	T
T	T	T
T	T	T
T	T	T

This shows that (N—3) $\not\supset$ (N—1b').

From the above consideration, we can say that the fallacy of *prakaraṇasama* was included in the fallacies of *Savyabhicāra*.

Now, let us consider the fourth variety of *hetvābhāsa*, according to *Uddyotakara*, i.e. *Sādhyasama* (= *Satpratipakṣa*, or *asiddha*).

Uddyotakara's formulation runs as follows :

N—4. (E g.∼E (f.∼g)) . (∼Eg. ∼E(f. g))

Let us construct truth-table,

(Eg.∼E	(f.∼g))	.		(∼Eg . ∼E(f.g))
T T T	T F F	F	F	F F T T T
F F F	T T T	F	T	T T T F F
T T T	F F F	F	F	F T F F T
F F T	F F T	F	T	T T F F F

Now compare (N—4) with (N—1a') and (N—1b') and see whether it implies or not.

For the value of the main connective of (N—1a'), we have in all rows 'T', while the value of the main connective of (N—4) we have in all rows 'F'. Then we can say that (N—4) is just reverse of (N—1a'). This implies that (N1a') $\not\supset$ (N—4), but (N—4) implies (N—1a'), i.e. (N—4) $\supset$ (N—1a').

Now let us consider (N—1b'), the value of the main connectives of (N—1b'). We have in all rows 'T' except the first one. This implies that (N—1b') $\not\supset$ (N—4) but (N—4) $\supset$ (N—1b').

Now we can say that *Savyabhicāra* is indirectly related to *sādhyasama*.

At last, now we consider the fallacy of *Kālātīta*.

Let us construct the formula of *Kālātīta* or (*bādha*) i.e. the fifth fallacy.

Suppose at time t1 (f$\supset$g), but at another time t2 we find that (f$\supset$∼g) or we find that 'g' is irrelevant.

In short, (N—5) runs as follows :

t1. — —~E(f.~g.). t2 — — — ~E(f.g.)

Let us construct truth—table :

t1— — E(f.g.)	.	t2 — — — E (f.g.)	
T T F F	F	F	T T T
F T T T	F	T	T F F
T F F F	T	T	F F T
T F F T	T	T	F F F

This abows that (N—5) is contingent because some time it is true (say, the last two rows) and some time it is false (say, the first two rows).

Now let us compare this value to the values of (N—1a') and (N—1b'). As already pointed out that the value of (N—1a') we have in all rows 'T'. Then, this implies that (N—1a') $\not\supset$ (N—5) but (N—5) ⊃ (N—1a').

On the other hand, we have (N—1b') in which we have in all rows 'T' except the first one. Then we can say that (N—1b) $\not\supset$ (N—5) but (N—5) ⊃ (N—1b'). Thus, we conclude that, *Savyabhicāra* is indirectly related to *Kālātīta.*

To sum up the Nyāya position, we can say that if we have the definition of *Savyabhicāra*, then we can get the definitions of remaining four fallacies, because remaining four fallacies are merged into *Savyabhicāra.*

II

In this Section, I would like to discuss the Buddhist position regarding *Hetvābhāsa* In the beginning of this chapter, I already pointed out that for the Buddhist the main *hetvābhāsa* is *Viruddha.* Let us construct the Buddhist formalizations of *Viruddha.*

B1 *Sādhyavyāpaka* (PaH)=~E(fx.~gx) . (Ex) (fx.gx)

Sādhyāvṛtti (SeH)=(Ex) (~f.hx.~gx).~(Ex) (~fx.hx.gx)

Vipakṣavyāpaka (VaH)=~(Ex)(~hx.~gx). (Ex)(~hx.gx)

So the whole formulation runs as follows :

(PaH) . (SeH) . (VaH) =

((~(Ex)(fx.~gx) . (Ex)(fx.gx)) . ((Ex)(~fx.hx.~gx).~(Ex) (~fx. hx.gx)) . (~(Ex)(~hx.~gx) . (Ex)(~hx.gx))

"(PaH).(SeH).(VaH)" can be deleted by the *Law of Equivalence*. Then we have,

((~(Ex)(fx . ~gx) . (Ex) (fx.gx)) . ((Ex)(~fx . hx . ~gx) . ~(Ex) (~fx.hx.gx)) . (~(Ex)(~hx.~gx) . (Ex) (~hx . gx)))

By the rule of E.I. we can delete existential quantifier. Then we have,

((~E(f. ~g). E(f.g)) . (E(~f.h.~g) . ~E(~f.h.g)) . (~E ~h.~g). (E(~h.g)))

Dignāga provides another definition of *Viruddha* which runs as follows :

Sādhyavyāpaka (PaH) = ~(Ex) (fx. ~gx) . (Ex) (fx.gx)
Sādhyāvṛtti (SeH) = (Ex)(~fx.hx.~gx).~(Ex) (~fx.hx.gx)
Vipakṣaikadeśavṛtti (VuH)=(Ex)(~hx.~gx).(Ex)(~hx.gx)

In other words :
(PaH) . (SeH) . (VuH)=
((~ (Ex) (fx. ~gx) . (Ex) (fx . gx)) . (Ex) (~fx. hx. ~gx).
~(Ex)(~fx. hx . gx)) . (Ex) (~hx. ~gx) . (Ex) (~hx.gx)))

"(PaH). (SeH) . (VuH)" can be deleted by the *Law of Equivalence*.

So, we have,
((~(Ex) (fx.~gx) . (Ex) (fx . gx)). ((Ex) (~fx . hx . ~gx) . ~(Ex) (~fx . hx . gx)) . ((Ex) (~hx . ~gx) . (Ex)(~hx.gx)))

By the rule of E.I. we can delete existential quantifier.

((~E(f . ~g) . E(f.g)) . (E(~f.h.~g) . ~E(~f.h.g)) . E(~h.~g). E(~h.g)))

By applying the Law of *Association*, we have,

(B1b) (~E(f.~g). E(f.g) . E(~f.h.~g).~E(~f.h.g) . E(~h.~g). E(~h.g))

Let us now construct the formulation of *anaikāntika* (=*aniścita*), uncertain *hetvābhāsa*.

The first formulation runs as follows :

Sādhyavyāpaka (PaH) =~(Ex) (fx.~gx) . (Ex) (fx . gx)
Sapakṣavyāpaka (SaH) =~(Ex)(~fx.hx.~gx).(Ex)(~fx.gx.hx)
Vipakṣavyāpaka (Vah)=~(Ex)(~hx.~gx) . (Ex) (~hx . gx)

In other words :

(PaH) . (SaH) . (VaH) =

((~(Ex)(fx.~gx)(Ex)(fx gx)) (~(Ex)(~fx hx.~gx). E(~fx hx.gx)). (~(Ex)(~hx . ~gx) . (Ex)(~hx.gx)))

"(PaH) . (SaH) (VaH)" can be deleted by the *Law of Equivalencc.*

By the rule of E.I. we can delete existential quantifier; so we have,

((~E(f.~g). E(f.g)) . (~E(~f.h.~h). E(~f.h.g)) . (~E(~h.~g). E(~h.g)))

By applying the LAW OF *Association*, we have,

(B2a) (~E(f.~g.).E(f.g).~E(~f.h.~g). E(~f.h.g) . ~E(~h.~g). E~(h . g))

Dignāga provides another definition of *anaikāntika* which runs as follows :

Sādhyavyāpaka (PaH) =~(Ex) (fx.~gx) . (Ex) (fx.gx)
Sapakṣāvṛtti (SeH)=(Ex)(~fx.hx.~gx). ~(Ex)(gx)(~fx.hx.gx)
Vipakṣāvṛtti (VeH)=(Ex)(~hx.~gx).~(Ex)(~hx.gx)

The whole formalization would be :

(PaH) . (SeH) . (VeH)=

((~ (Ex) (fx . ~gx) . (Ex) (fx . gx)) . ((Ex) (~fx . hx . gx). ~(Ex) (~fx.hx.gx)) . ((Ex) (~hx. ~gx) .~(Ex) (~hx . gx)))

"(PaH) . (SeH) . (VeH)" can be deleted by the *Law of Equivalence.*

And by applying the rule E.I. we have,

((~E(f.~g) . E(f.g)) . (E(~f. h.~g) . ~E(~f.h.g)). (E(~h.~g). ~E(~h.g)))

Then by applying the *Law of Association*, we have

(B2b) (~E(f.~g).E(f.g). E(~f h.~g) . ~E(~f.h.g) . E(~h.~g). ~E(~h.g))

Now, let us compare (B1a) and (B1b) with (B2a) and (B2b). For this purpose, let us deny both (B1a) and (B1b).

Then we have,

(B1a')~(~E(f ~g).E(f.g).E(~f.h.~g). ~E(~f.h g). ~E(~h.~g).
E(~h.g))

By applying the *Demorgan Law*,

(~ ~E(f. ~g) V~E(f. g) V~E(~f. h. ~g) V~ ~E(~f. h. g)
V~ ~E(~h. ~g) V~E(~h g))

So, by the *Law of Double Negation,* we have

(E(f.~g)V~E(f g)V~E(~f.h.~g)V E(~f.h.g) V E(~h .~g)V~E
(~h.g))

Let us now construct the truth-table :

((E(f.~g) V~E(f g)) V~E(~f.h.~g)) V((E(~f.h.g) VE(~h.~g))
V~E(~h.g))

F T	F F F T T	T T F T F	T F F T T F F	F F	T T F T
F T	F F F T T	T T F F F	T F F F T F F	T F	F F T T
T T	T T T T F	T T F T T	T F F T F F F	F T	T T F F
T T	T T T T F	T T F F T	T F F F F T T	T T	T T T F
F F	F T T F T	T T T T F	T T T T T T F	F F	T T F T
F F	F T T F T	T T T F F	T F T F T F F	T F	F F T T
F F	T T T F F	T F T T T	T F T T F F F	F T	T T F F
F F	T T T F F	T T T F T	T F T F F T T	T T	T T T F

Let us take out the truth-value of (B1a')

T
T
T
T
T
T
T
T

(B1b') ~(~E(f.~g). E(f.g) .E(~f.h.~g). ~E(~f.h.g).E(~h.~g).
E(~h.g))

By applying *Demorgan Law*, we have

(~ ~E(f.~g) V~E(f.g) V~ E(~f.h.~g) V~ ~E (~f.h.g) V~E
(~h.~g) V~E(~h.g))

Again applying the Law of Double-Negation, we have

(E(f.∼g) V∼E(f.g.) V∼E(∼f.h.∼g) VE(∼f. h. g) V∼E(∼h. ∼g) V∼E(∼h.g))

Let us now construct the truth-table :

((E(f.∼g)V∼E(f.g))V∼E(∼f.h ∼g)) V((E(∼f.h g) V∼E(∼h.∼g)) V∼E(∼h.g))

F T	F F F T T	T T F T F	T F	F T T	T T F F	T T	F T
F T	F F F T T	T T F F F	T F	F F T	T T F T	T F	T T
T T	T T T T F	T T F T T	T F	F T F	T T F T	T T	F F
T T	T T T T F	T T F F T	T F	F F F	F F T T	T T	T F
F F	F T T F T	T T T F F	T T	T T T	T T F F	T F	F T
F F	F T T F T	T T T F F	T F	T F T	T T T F	T F	T T
F F	T T T F F	T F T T T	T F	T T F	T T F T	T T	F F
F F	T T T F F	T T T F T	T F	T F F	F F T T	T T	T F

Thus the value of (B—2b') is :

T
T
T
T
T
T
T
T

Let us now construct the truth-table of (B2a) :

(∼E(f.∼g).E(f.g).∼E(∼f.h.∼g)).((E(∼f.h g).∼E(∼h.∼g)).E(∼h.g))

T T F T T T T T T F T F F	F F T T F T F F F F T
T T F T T T T T T F F F F	F F F T F T T F F T T T
F T T F F T F F T F T T F	F F T F F T F T F F F F
F T T F F T F F T F F T F	F F F F F F T T F F T F
T F F F F F T F T T T F F	F T T T T T F F F F F T
T F F F F F T F T T F F F	F T F T F T T F F T T T
T F T F F F F F F T T T F	F T T F F T F T F F F F
T F T F F F F F T T F T F	F F T F F F T T F F T F

Thus the truth value shows that (B2a) implies both (bla') and (Blb'), In other words,

(B2a)⊃(Bla'}

and

(B2a)⊃(Blb')

but not the reverse, so we have

(Bla')⊅(B2a')

and

(Blb')⊅(B2a)

Hence indirectly connected to *Viruddha*.

Let us now construct the truth-table of (B2b)

((~E(f. ~g) . E(f.g)) . E(~f.h.~g)) . ((~E(~f.h.g). E(~h.~g)).
E(~h.g))

T F F	T T T T	F F	F T	F F	T F T T F F	F F	F T F T
T T F	T T T T	F F	F F	F F	T F F T F F	T F	F F T T
F T T	F F F F	F F	F T	T F	T F T F F F	F T	F T F F
F T T	F F T F	F F	F F	T F	T F F F T T	T T	T F T F
T F F	F F F T	F F	T T	F F	F T T T F F	F F	F T F T
T F F	F F F T	F F	T F	F F	T T F T F F	T F	F F T T
T F T	F F F F	F T	T T	T F	T T T F F F	F T	F T F F
T F T	F F F F	F F	T F	T F	T T F F T T	T F	F T F F

This also shows that (B2b) implies in both (B1b') but not vice-versa. So, we can say,

(B2b) ⊃ (B1a') and (B2b)⊃ (B1b)
(B1a) ⊅ (B2b) and (B1b') ⊅ (B2b)
Hence, *Viruddha* is indirectly related to *anaikāntika*.

Let us now construct *asiddha hetvābhāsa*.

(B3) (E(g).~E(f.~g.)). ~E(g).~E(f.~g)

T T T T F F	F	F	F	T T F F
F F F T T T	F	T	F	F T T T
T T T F F F	F	F	F	T F F F
F F T F F T	F	T	T	T F F T

(B3) also shows that it implies both (B1a') and (B1b') but not vice-versa.

In other way :

(B3)⊃(B1a') and (B3)⊃(B1b) :

(B1a')⊄(B3) and (B1b')⊄(B3)

Hence *asiddha* is directly related to *Viruddha.*

At last by the *Law of Equivalence*, we can delete either (B1a') of (B1b') either (B2a) or (B2b) or (B3) on the basis of their respective values.

Thus for the Buddhist there are two varieties of *hetvābhāsas* viz. *Viruddha* and *anaikāntika.*

Let us now compare (B1a') with *first* (N1a) and then (N1b).

Let us construct truth-table of (N1a) :

$$(\sim E\ (f.\ \sim g)\ .E(f.\ g)\ .E\ (\sim f.\ h.\ g)\ .\ ((\sim E\ \ (\sim f.\ h.\ g.\ \ \sim E\ \ (\sim h.g)).\ \sim E(\sim h.\sim g))$$

T T	F T T T T F F F T	F	F	T F T T T T	F T	T T	F F
T T	F T T T T F F F F	F	F	T F F T F F	T T	F T	T F
F T	T F F T F F F F T	T	F	T F T F T T	F F	T T	F T
F T	T F F T F F F F F	T	F	T F F F T T	T F	F F	T T
T F	F F F F T F F T T	F	F	F T T T F T	F T	F T	F F
T F	F F F F T F F T F	F	F	T T F T F F	T T	F T	T F
T F	T F F F F F T T T	T	F	T T T F T T	F F	T T	F T
T F	T F F F F F F T F	T	F	T T F F T T	T F	F F	T T

Truth-Value of (B1a')	⊃	*Truth Value of (N1a)*
T	F	F
T	F	F
T	F	F
T	F	F
T	F	F
T	F	F
T	F	F
T	F	F

This shows that (B1a')$\not\subset$(N1a)

Truth-Value of (*N1a*)	$\supset$	*Truth-Value of* (*B1a'*)
F	T	T
F	T	T
F	T	T
F	T	T
F	T	T
F	T	T
F	T	T
F	T	T

This shows that (N1a)$\supset$(B1a'). Hence (B1a') is indirectly related to (N1a).

Let us now construct truth-table of (N1b) :

((∼E(f.∼g).E(f.g)) . ∼E(∼f.h.g)) . ((∼E(∼f.h,∼g) . ∼E(∼h.g))
.∼E(∼h.∼g))

T T	F T T T T	T T	F T T	T	T	F T	F T T F T	T T F	F
T T	F T T T T	T T	F F T	F	T	F F	F F F T T	F T T	F
F T	T F F T F	F T	F T F	F	T	F T	T T T F F	T T F	T
F T	T F F T F	F T	F F F	F	T	F F	T T T F F	F F T	T
T F	F F F F T	F F	T T T	F	T	T T	F T T F T	T T F	F
T F	F F F F T	F T	T F T	F	T	T F	F F T T T	F T T	F
T F	T F F F F	F T	T T F	F	F	T T	T F T F F	F T F	T
T F	T F F F F	F T	T F F	F	T	T F	T T T T F	F F T	T

(B1a')	$\supset$	(N1b)
T	T	T
T	F	F
T	F	F
T	F	F
T	F	F
T	F	F
T	F	F
T	F	F

This shows that (B1a') is indirectly related to (N1b). In other words, we can say :

(B1a')⊄(N1b) and,

(N1b)⊃(B1a')

Let us now construct truth-table of (B1a)

((∼E(f.∼g,) .E(∼f.g.) . E(∼f h.g)) . ((∼E(∼f.h g) . ∼E(∼h.∼g.) .E(∼h.g.))

T T	F T T T T	F	F F T F F	T	F T T T T T	F F	F F	F T
T T	F T T T T	F	F F F F	F	T	F F T T T T	F	T T	T T
F T	T F F T F	F	F F T T	F	T	F T F T T F	T	F F	F F
F T	T F F T F	F	F F F F	F	T	F F F F F T	T	F F	T F
T F	F F F F T	F	F T T F	F	F	T T T F T F	F	F F	F T
T F	F F F F T	F	F T F F	F	T	T F T T T T	F	T T	T T
T F	T F F F F	F	T T T T	F	T	T T F T T F	T	F F	F F
T F	T F F F F	F	F T F T	F	T	T F F F F T	T	F F	T F

Now we can see the truth-value without the denial of (B1a) is equivalent to (N1a). Let us see,

(B1a)	≡	(N1a)
F	T	F
F	T	F
F	T	F
F	T	F
F	T	F
F	T	F
F	T	F
F	T	F

This shows that there is no difference between (B1a) and (N1a). Hence, we can delete either one of them viz.,

(B1a) (∼E(f.∼g).E(f.g.).E(∼f.h.∼g) . ∼E(∼f.h.g) . ∼E(∼h.∼g). E(∼h.g))

or

(N1a) (∼E(f.∼g.).E(f.g).E(∼f h.g.) . ∼E(∼f.h.g).∼E(∼h.g) . ∼E (∼h.∼g)

As I already pointed out (N1b) is indirectly related to (B1a), while (N1b) does not imply (B1a) ; (B1a) implies (N1b). Hence (Nab), i.e.

$$(\sim E(f.\sim g) \;.\; E(f.g.) \;.\; \sim E(\sim f.h.g) \;.\; \sim E(\sim f.h.\sim g) \;.\; \sim E(\sim h.g).\sim E(\sim h.\sim g))$$

can be into (B1a).

To sum up, every fallacy is related to either *Viruddha* or *anaikāntika* or both *Viruddha* and *anaikāntika* (=*Savyabhicāra*). The formal analysis adopted here is indicative of the fact that on purely formal grounds one can assert that (a) *Savyabhieāra* and *Viruddha* are the two logically primitive *hetvābhāsas* and they together would imply all the other varieties of *hetvābhāsa* expounded by Nyāya and Buddhism; (b) all the *hetvābhāsas* are linked with respective views of *sad-hetu* accepted by these two schools; (c) it would be not correct, however, to suggest that these are formal fallacies, they in their formulation are intimately linked to facts and are also contextually determined inasmuch as that a traditional Indian logician would never hesitate in rejecting conclusions drawn on formal grounds in preference to the fact that may obtain in the world of experience.

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INDEX

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